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EMBELLISHMENTS.

January.—"Portrait of a Child," and a series of Eight Studies in American Portraiture. By JARRETT BROTHERS, Pittsburg, Pa.

February.—"Googa." By W. G. C. KIMBALL, Concord, N. H. Engraved from the print exhibited at the Philadelphia Salon, 1901. Nine engraved supplements from photographs by J. E. WATSON, New York, and W. N. BRENNER, Cincinnati.

March.—"A Portrait Group," and eight engraved supplements from silver prints made by HENRY ROCHER, Chicago, about 1869.

April.—"A Veteran Minister." By WM. NOTMAN & SON, Montreal, Canada. Eight supplements engraved from photographs by W. DE VORE, Leamington, Can.; FRANK G. SCHUMACHER, Los Angeles, Cal.; W. NOTMAN & SON: D. D. SPELLMAN, Detroit, and G. G. ROCKWOOD, New York.

May.—"Portrait of a Violinist." By D. D. SPELLMAN, Detroit, Mich. Two engraved supplements by D. D. SPELLMAN and the CARBON STUDIO, Marietta, Ohio.

June.—"Portrait," and fourteen engraved supplements from photographs by SARONY, Scarborough, Eng.

July.—"Portrait of a Gentleman," and seven engraved supplements from photographs by PACH BROTHERS, New York. Portrait of the late Henry Morton, Ph.D., of Stevens Institute, Hoboken, N. J.

August.—"Portrait of an Old Man," and five engraved supplements from photographs by C. A. KRAUSCH, Pasadena, Cal. "Home Portrait." By WILHELM WEINER, Darmstadt. "Mother and Child." By A. W. GOODMAN, Belvedere, Kent, Eng. Le Brun's portrait of Madame Vignée et sa Fille. (Louvre.)

September.—"A Study in Grouping." By H. BRANDSEPH, Stuttgart. Two figure portraits, by KLEIN and GUTTENSTEIN, Milwaukee, Wis.

October.—"Portrait." By MORRIS BURKE PARKINSON, Boston, Mass. Sixteen engraved supplements reproduced from pictures shown at the New England Salon of 1902, Boston.

November.—"An Incident in the Duke of York's World Tour." By E. GALL, Adelaide, South Australia. Eight engraved supplements from photographs by S. AUNE; OSCAR SUCK; F. BOISSONNAS; WHITNEY & SON; A. MARSHALL; ERNEST GALL; BREHMER BROS., and JAMES H. MCCORKLE.

December.—"Portrait of a Boy." By O. BOYÉ, San Francisco. Sixteen engraved supplements from photographs by J. C. STRAUSS; GEORGE STECKEL; W. N. BRENNER: G. HABERNICHT; P. S. RYDER; S. LIFSHEY; H. RANDALL; HOMEIER & CLARK; GEO. E. TINGLEY; D. ROSSER, and others.

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ILLUSTRATIONS.

A full-page supplement is indicated by the name of the month.

ANSELM, W.—October
Aune, S.—November

BACHROUSCHIN, M.—October
Baker, Harold.—October
Barnett, Walter—October
Boissonnas, F.—October, November
Boyé, Otto.—December
Brandseph, H.—September
Brehmer Bros.—November
Brenner, W. N.—February, December
Burke, Walter, 176, 179
Butchers' wagons.—November

CAMP, A MILITARY, 177
Carbon studio, Marietta, 184, 186
Card-index system illustrated, 188
Christmas, His First, 137
Clench, F. B., 187
Copying camera, 276
Costume portrait, 138
Crooke, William.—October

DE VORE, GEO. W.—April
Dubreul, Pierre.—October
Duhrkoop, R.—October

ENLARGING CAMERA, 276

FLUID LENS, Grun's, 180

GALL, ERNEST.—November
Gilmore, Paul, as Don Cæsar, 56
Goodman, A. W., 185.—August
Grun, Dr., Portrait of, 179
Grun's fluid lens, 180, 181

HAMNQUIST, H.—October
Hofmeister, Theo. & O.—October
Homeier & Clark.—December

JARRETT BROS.—January

KEMP, JOHN H.—June
Kimball, W. G. C.—February
Klein and Guttenstein.—September
Krausch, C. A.—August

LE BRUN, MADAME VIGNEÉ.—August
Lens testing instrument, 265
Lifshey, S. H.—December

MARSHALL, A.—November
Marshall, W. E.—October
McCorkle, James H.—November
Meiche, K.—October
Morton, Hy., The late, 264

NOTMAN & SON.—April

PACH BROS.—July
Parkinson, M. B.—October
Partridge, W. H.—October
Pierce, H. H.—October
Puritan, A Little, 185

RANDALL, H.—December
Reception of Duke of York.—November
Reeves, C. R.—December
Richardson, Mrs. F. C., 137
Rocher, Henry.—March
Rockwood, George G., Portrait of, 137
Rösch. J. E.—December
Rosser, D.—December
Ryder, James F., 425
Ryder, Philip H.—December

SARONY STUDIO.—June
Schumacher, F. G.—April
Shepherd and His Flock.—November
Spellman, D. D.—April, May
Standish & Preece, 138
Steckel, George.—December
Strauss, J. C.—December
Suck, Oscar.—November
Summertime in Vermont.—November

TINGLEY, GEORGE E.—December

VOIGTLANDER AND I, 425

WATKIN, H. E., 59
Watson, J. E.—February, June
Weigel's X-ray stereoscope, 60
Weimer, Wilhelm.—August
Werner, Alfred.—October

X-RAY STEREOSCOPE, Weigel's, 60

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INDEX.

A, B, C of photography, 444
Accessories, 96
Acetone in development, 199, 302
sulphite. A new preservative, 165
Actinic light, developing in, 149
measuring, 159
Adding figures to groups, 105
Advertising, practical, 8, 57, 109, 161, 259, 297, 305, 361, 383, 414, 433
A. G. F. A. as a stain remover, 214
Alkalies in development, 163
Alkaline fixing bath, 23
Aluminum film sheaths, 159
Amateur Exchange Club, 209
American Institute, 448
portraiture, 97, 440, 461
Ammonium persulphate in photography, 218, 236
Angle, natural view, 429
Anthony & Scovill Co., the, 79
Animals, photographing, 26, 215, 293, 316
Appleton's address at Buffalo, 353
Art possibilities in portraiture, 350
is photography an? 201
reproductions, reference library of, 190
Aspects of professional photography, 409
Association news, 72, 203
At-home work, 373

BACKED plates and halation, 445
Backing plates, 56
Backgrounds, 92
points on, 364
stands, 297
Balloon photography, 175
Bardwell, Jex, 248
Bateham's address on professional photography, 389
Beeswax in solution, 32
Belgium, photography in, 2
Belitski's reducer, 16
Better prices, getting, 378
Biograph *vs.* Edison, 154
Black and white, drawing in, 49
finishing prints in, 421
Blocking out skies, 64, 76
Blotters, chemically pure, 286
Blue prints on cloth, 30
Booklet advertising, 161, 258, 381
Books, some new, 443
Boston convention, 362, 392, 393
Bottles, 285
Broken negatives, to repair, 159
Bromide development, 104
paper, fixing, 182
prints, toning, 147, 172, 391, 435
Brush development, 136
Buffalo convention, 238
Business outlook, 34, 377
photography as a, 3, 25, 34, 42, 65, 145, 226, 235, 261, 321, 338, 377, 406, 440, 457
season, the, 377
to get, 226
Buying a studio or business, 321, 411

C. P. and its meaning, 106
Camera as a detective, 61
in tailoring, 104
notes, 447
Carbonate of soda, tests of, 200
Carbon printing, 20, 45, 47, 48, 73, 129
prints, intensifying of, 224
tissue keeping, 445
California camera catches, 137
Card-index system, 188
Cerium sulphate as a reducer, 302
Ceramics, imitation of, 6
Character, reading, 291
Child portraiture, 452
Children, photographing of, 122, 452
Chromate printing, chemistry of, 45
Cleaning daguerreotypes, 54, 372
up, 284
Clippings from magazines, 289
Cloth, blue prints on, 30
Clouds, printing in, 309
Cockling, to prevent mounts, 187
Collotype for amateurs, 12
Colored photographs, 54, 56, 93, 136
positives, 206
Colors, photographing in, 73, 98, 124, 182
Combined development and fixing, 136
Comparative exposures in enlarging, 119
Comparison of intensification methods, 229
Commercial photography in London, 456
Composite pictures, 105
Composition, 24, 333, 386
a necessity, 386
in genre, 442
Concession at St. Louis fair, photographic, 389
Construction of dark-rooms, 127
Controls the portrait, who? 457
Convention of Wisconsin Association, 152
of the P. A. of A., 238, 329, 366, 375
pictures at the Buffalo, 366
the Iowa, 182
trade exhibits at the Buffalo, 375
Copying, 422
camera, a, 276
daguerreotypes, 372
prints, 199
Copyright in Europe, 264
Cracked negatives, to repair, 159
Criticism, 116
Customer, treatment of the, 379
Customers, idiosyncrasies of, 355
retaining, 25

DAGUERREOTYPES, cleaning, 54, 372
copying, 372
Dark-rooms, construction of, 127
Daylight cut films, 95
Deadblack varnish, 56
Decision in moving pictures, 154
Density, to obtain, 192, 290
"Denver Limited," photographing the, 108
Detective, the camera as a, 61

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Deterioration of lenses, 134
Development, acetone sulphite in, 165
alkalies in, 163
and fixing combined, 136
factorial, 3
of bromides, 104
of velox paper, 11
with a brush, 136
with glycin, 31
with paramol, 53
Developing in cold weather, 103
the reversed image, 149
Diagrams, lantern slides of, 438
Difficulties in carbon printing, 129
Diluting the developer, 56
Displaying photographs, 24, 42, 83, 91, 166
Doctoring negatives, 186
Dogs, photographing, 215
Domestic animals, photographing, 316
Doubles, 17
Draper, Anna Catherine, 40
Drawing in black and white, 49
Dry, keeping platinum paper, 445
Drying closet, 16
Duplicate negatives, 176
Dusseldorf, exhibition at, 248
Dust as a destroyer, 286
in plate holders, 192

EASTMAN kodak, a new, 278
Eder's school of photography, 2
Editor's table, 39, 79, 119, 159, 207, 247, 287, 327, 445, 488
Effects, wash-drawing, 167
Electric light for portraiture, 481
in the studio, 450
Elimination of hypo, 217
Enameling collodion prints, 64
Enamels, imitation, 6
End of 1902 and after, 449
Engraving, arts of, 77
Enlargements, finishing, 421
Enlarging camera, an, 276
comparative exposures in, 119
stops in, 118
to natural size, 55
European photographs at Boston, 392
portraiture, 1
Everlasting waiting, 419
Exchange Club of 1860, an amateur, 209
Executive meeting of P. A. of A., 41
Exhibitions by photographers, 108, 166
Exposure, 167
out of doors, 257
Expression in portraiture, 44, 445

FABRICS, fireproofing, 135
printing on, 30
Factorial development, 3
Factors in exposure, 167
Faded negative images, to recover, 187
Fads, a note on, 244
Faking, a word about, 355
Farmer's reducer, 236
Fastest lens, the, 194
Figures in portraiture, 68
Films, 46, 95
Finishing prints in monochrome, 421
the negative, 443
Fireproofing fabrics, 135
Fixing bath, alkaline, 23
and development combined, 136
Flashlight work, 95, 283
Flashlight portraiture, 283
Fluid lens, Grun's, 179
Framing the photograph, 33, 301
Frilling, 197, 444
Fuzzygraphs *vs.* plain portraits, 401
F. value of stops in enlarging, 118

GELATINE films, hardening, 482
Genre, composition in, 442
Glass measures, to repair, 96
positives, 38
vessels, photographing, 24, 159
Glossy prints, mounting, 192
Glycin and hydroquinone, 31
Good-will as an asset in business, 321
Group compositions, 333
Groups, adding figures to, 105
in focus getting, 178
W. J. Edmondson on, 397
Grun lens, the new, 179, 194

HALATION and quick development, 445
Hands across the sea, 98
Hands in portraiture, 245
Hardening gelatine films, 482
Hewitt's new light, 144
Holidays, about, 261
How to advertise, 415
Hydrochloric acid, 186
Hydrofluoric acid, uses of, 459
Hydrometer, the, 79
Hydroquinone and glycerin, 31
for copying, 423
Hypo, elimination of, 217

IDEALS in art, 396
Idiosyncrasies of customers, 355
Idle cameras, 206
Illustration, photography for, 15
Image, reversal of the, 149
Imitation ceramics, 6
Improved ozotype process, 249
Improving negatives, 118, 308
Incidental lighting, 427
Indiana convention, 204
Individuality, 207
Ink for mounts, white, 287
Instruction in Great Britain, photographic, 485
Insurance, 128
Intensification, 198, 223, 229
local, 419
Interiors—a wrinkle, 11
exposure in, 170
Iowa convention, 182
Iron printing process, 197

JARVES collection of paintings, 448

KANSAS association, 72, 327
Kentucky convention, 204
Key to higher prices, 382
Kodak, a new, 278

LAINER'S reducer, 56
Lantern-slide tips, 156
slides of diagrams, 438
Large portraits, 263
Lens and Brush Club, the, 400

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Lens-testing, 265
Lenses, deterioration of, 134
for studio work, 318
Light, a new, 144
the new Mita, 175
plenty of, 104
Lighting, incidental, 427
Likeness, 277
Limitations of professional photography, 389
Line engraving effects, 159
Local intensification, 419
London, photographers in, 1
Lytrit portraits, 39, 98, 167

MACHINERY, photographing, 131
Manipulation in ozotype process, 250
Man out of place, 65
Masking the negative, 308
Measure, photography by, 173
Mercuric chloride solutions, 175
Mercury, 222
gas as an illuminant, 145
Method *vs.* velox, 11
Methods, business, 338, 378
and formulæ, 23, 55
Microphotographs, 113
Miniatures, 7
Mirror in photography, 216
Mita light, the new, 175
Modification of platinum prints, 417
Monochrome, finishing prints in, 421
Moran, John, 120
Morton, Dr. Henry, 281
Motak, a new intensifier, 327
Mounting and framing, 301
glossy prints, 192
Mounts, 87
home made, 207
Moving objects, photographing, 111
pictures, an important decision, 154
Multiphotography, 119
Multiple portraits, 17

NATIONAL convention, 329
Natural color photography, 73
Natural history photography, 26, 293
size, enlarging to, 55
view angle, 420
Nebraska Association, 120, 246
Necessity, composition a, 386
Negative density, 290
New books, 443
New England Association, 72, 320, 362, 392, 393
News and notes, 64, 135, 175, 264, 312, 462
Newspaper photography, 15
New use for the swing-back, 178
Nipher's investigations of reversal, 149

OHIO-Michigan convention, 205, 304, 320, 403
Old *vs.* young men, 227
One thing at a time in advertising, 8
Orders from old copies, 380
Origin of the silhouette, 64
Ornaments, photograghs as, 445
Our pictures, 17, 139, 185, 225, 285, 327, 481
Out of doors, exposure, 257
Ozotype process, 45, 101, 233, 249

P. A. OF A., 41, 195, 236
Pach, Gotthelf, 119
Pacific N. W. Association, 73
Panoramic pictures, 78
Paper and its purity, 100
sizing, 55
Paramol developer, 53
Parisian photographers, 2
Paris salon and photography, 121
Parkinson's address at Buffalo, 355
Peculiarities in sitters, 112
Pencil markings on bromide paper, 223
Pennsylvania Association, 120, 203, 275
Permanence of photographs, 209
of velox, 71
Permanency in intensification, 231
of bromide prints, 391
Permanent supports in carbon printing, 47
Persistence of vision, 117
Photographic concession at St. Louis Exposition, 388
record work, 112
Photographing a train, 108
Photographs, collections of, 135
Photography at Paris salon, 121
at St. Louis World's Fair, 121, 254, 388
by measure, 173
for the press, 15
in colors, 73, 98, 124, 312
Pictorial composition in photography, 383
photography and advertising, 382
Pictures, our, 17, 139, 185, 225, 285, 327, 431
Pigment process, starch gum, 141
Pinholes, 206, 223
Plates, backing, 56
in the tropics, 295
Platinotype process, 310
Platinotypy, hot water in, 136
Platinum prints, modifying, 416
residues, 157
toning, 96
Polished silver, photographing, 24
Portraiture, a note on European, 1
art possibilities in, 350
as a business, 281
expression in, 44
figures in, 68
flashlight, 283
twenty-five years ago, 97
Professor Beck on, 350, 386, 399
Positives, colored, 206
on glass, 38
Practical advertising, 8, 57, 109, 161, 259, 297, 305, 361, 433
methods and formulæ, 104, 285
Preservative, acetone sulphite as a, 165
Press photography, 15
Price lists and show cases, 42
Prices, getting better, 378, 382, 455
Prints, copying, 199
Privacy in the portrait, the right of, 457
Professional photography, its limitations, 389
some aspects of, 409
Progress medal of the R. P. S., 458
Proofs, about, 380
Purity of blotters, 287
Pyro spots on negatives, 192, 230

R. P. S., progress medal of the, 458
Radiography, 51, 59, 117
Radiometer, 159
Raising prices, 455
Rapidly moving objects, 108, 111
Reception-room, the, 145, 378
Record work, photographic, 112
Recovery of faded negative images, 187

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Reducers, 16, 56, 198, 236
Reference library of reproductions, 190
Residues, platinum, 156
to recover, 84, 118, 306
Restrainer, sodium citrate as a, 192
Retaining the customer, 25
Retouching, 63, 88, 224
Reversal of the image, 149
Rocher, Henry, 97, 162, 240, 279
Rockwood, George G., 96, 140

SAFE edge in carbon printing, 83
light, a 159
Salespeople in the studio, 379
Salon, for revenue only, 166
pictures, New England, 392
the Chicago, 314
the Ohio-Michigan, 404
the Paris, 121, 248
Sanger Shepherd color process, 73
Scandlin, W. I., 207, 248, 288, 447
Scrap book, keep a, 84
School photography, 381
Seismology and the camera, 108
Sensitive paper in X-ray work, 51
Sensitizing carbon tissue, 129
Show case, the, 24, 42, 83
windows, 83
"Show Sunday," 91
Silent shutter for portraiture, 392
Silhouette, origin of the, 64, 224
Silk, sensitizing, 24
Silver, to photograph, 24
wastes, to recover, 84, 118
Single slant studio, 123
Sitters with peculiarities, 112
Size in enlarging, natural, 55
of hands in portraits, 245
Sizing paper, 55
Skies, blocking out, 64
Sky, photographing against the, 36
Slot machine, X-ray, 117
Snow photography, 18, 65
Sodium carbonate, tests of, 200
citrate as a restrainer, 192
Solutions of mercuric chloride, 175
Sperry's, G. B., new studio, 451
Splash preventer, a, 176
Spotting pinholes, 224
Stains, to remove pyro, 186, 192
silver, 187, 298
Stalking with the camera, 29
Standard sizes, 55
Stands, background, 297
Starch gum process, 141
Stereoscope, an X-ray, 59
Stereoscopic post-cards, 264
Steps and stairs, 235
St. Louis' World's Fair, 121, 254, 388
Stops in enlarging, 118
Stripping negatives, 95
Studies of trees in winter, 189
Street photography, 299
Studio construction, 412
single slant, 123
work, lenses for, 318
Successful photography, 406, 445
Sulphite of soda, 115, 437
Sulphites in photography, 437
Supports in carbon printing, 47, 319
Surveying, photographic, 135
Swingback, a new use for the, 178
System, the card-index, 188

TAILORING, camera in, 104
Taylor, Taylor & Hobson, 327
Telephotography, 360
Temporary supports in carbon printing, 47
Testing lenses, 265
Tests of sodium carbonate, 200
Texas Association, 73
Theatre photography, 179
Threescore years and ten, 140
Tilting negatives, 445
Timely business suggestions, 226
Tinted mounts, 207
photographs, 54, 93
Tips, lantern-slides, 156
Toning bromide prints, 147, 391, 435
platinum, 96
Trade exhibits at Buffalo, 375
Train, photographing a, 108
Trees in winter, 189
Tricks, photographic, 143
Tropics, plates in the, 295

UNPRODUCTIVE advertising, 361

VARNISHES, 56
Varnishing, about, 205
Velox printing, 70, 89
vs. method, 11
Verrill's color photography, 124
View angle, natural, 429
Vignetting, 374
Virginia Association, 73
Vision, persistence of, 117
Voigtländer and I, 425
Volcano photography, 287

WAITING, everlasting, 418
Wash drawing effects, 167
Washing plates quickly, 159
Waste, wilful, 192
Wastes, to recover, 84, 118
Watkins' system of development, 3
Wax in solution, 32
Weigel's X-ray stereoscope, 59
Weil, Miss M., 313
What does C. P. mean? 106
White ink, 287
Why advertise? 414
Why is advertising unproductive? 361
Will the public stand it? 484
Winter, trees in, 189
Wiry retouching, 88
Wisconsin Association, 72, 151
Workshop, chips from a, 206, 224, 327, 445

X-RAY manual, 328
photography, 51, 59
slot machine, 117
stereoscope, 59

YOUNG *vs.* old men, 827

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PORTRAIT OF A CHILD

By Jarrett Bros., Pittsburg, Pa.

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WILSON'S PHOTOGRAPHIC MAGAZINE.

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A NOTE ON EUROPEAN PORTRAITURE.

BY OTTO BOYÉ.

PORTRAIT work in the professional studios of Europe is rather disappointing to the visitor who expects much from the birthplace of photography, and, taken in comparison with the work of American photographers in the same field, the average falls below ours.

Passing through the country in a hurried manner, these notes, roughly jotted down, are necessarily incomplete, but give a fair idea of the work abroad as viewed from an American stand-point. The first town visited—Cork, in Southern Ireland—offered nothing but the ordinary class of portraiture, the vignette style of ten years ago still being in vogue. Some of the larger places combine the photographic supply and stationers' trade with the studio, the latter usually occupying the rear of a ground-floor establishment.

A few prominent photographers are represented in Dublin, and turn out a good quality of technical work, good chemical effects, subjects fairly well posed, and almost generally finished in bricky tones on glossy paper. Some carbon work in various colors relieves the monotony in a few places, but displays of these prints were the exception.

The next city where anything noteworthy in photography was observed was Glasgow. Annan & Co., among the prominent ones, are working on modern lines, and have some beautiful examples of artistic work on exhibition. These gentlemen also go in for the reproduction of famous paintings, etchings, and the like, which form a good portion of their trade. Other studios in Glasgow display some excellent work in carbon and print-out papers, but in a number of instances their merit is offset by the mixture of prints which makes one wish that something more awful had happened to them before reaching their present finished state.

Other cities on the way to London furnished nothing new or interesting.

The photographic situation in London differs but little from all large cities. The principal studios patronized by royalty at some time or other during their existence seem to find it necessary to advertise the fact prominently on all signs and mounts, and make their displays principally of these personages. Other studios, especially those conducted on modern ideas, are turning out some really artistic work, noteworthy among which is the Biograph Studio (Harold Baker). This studio, though small, as all London galleries are, is fitted up in excellent taste, and shows some clever work, which has been medalled at English exhibitions. Histed, on Baker Street, also displays some good modern work tastefully framed. Another interesting studio visited was that of C. E. Fry & Son, in South Kensington. This studio is planned as a residence, and the rooms are all compactly planned out on one floor. The reception-room is nicely arranged, comfortable, and home-like, and contains, among other good features, a miniature aquarium for the amusement of the younger folks. The operating-room is very much like other

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studios seen all over the kingdom and on the Continent, and consists of a room perhaps 15 x 30 feet, having a top and side light from end to end. Very little of this immense light is actually used, however, the benefit being that either end of the studio can be worked.

The photographers of London number, I was told, nearly two thousand, and most all suffer from the effects of cheap prices. Photographs can be had for a mere song, and the usual thing is of very poor quality. Bromides and glossy paper, printed in vignettes and mounted on album-sized cards, are still in good favor. Carbon and platinum are only occasionally seen in the better studios.

The cities in Belgium and Holland were next visited, and though some work in Brussels showed merit in its good chemical qualities, nothing special was noted. A number of photographers in Hamburg are working along modern lines bordering on the extreme. Their work, however, is strong in treatment of character, and shows a good acquaintance with composition, lighting, and expression. Berlin professionals are in the throes of accessories, backgrounds, etc., and it seems to be the general thing to fill the acreage about the sitter with columns, curtains, palms, and all the rest of it, just as we used to do twenty years ago. Enlargements in water-color and oil are a prominent specialty, and one studio advertised life-sized bas-reliefs in bronze and other metals, done entirely by photography. The professional conditions in other German cities visited were somewhat similar, the work being of a mediocre quality, with an occasional exception.

A pleasant hour was spent in the Graphische Lehr Versuchsanstapt, in Vienna, of which Dr. Eder is the leading light. The institution is a big enterprise, and has at the present time about two hundred and fifty pupils enrolled. All kinds of photographic processes are taught, from work in bichromate, platinum, carbon, etc., to photo-engraving and photogravure. The exhibition-rooms, of which there are a number, contain some splendid prints by noted workers from different countries; also some excellent work by the pupils in three-color and bichromate printing.

Professional work in Italy is of an indifferent order, and outside of one photographer in Venice, who was doing some creditable work in carbon, nothing was encountered of interest in the photographic line.

The thought strikes one very forcibly in travelling through these countries, with their wealth of art treasures and the magnificent paintings encountered at every turn, why the photographer does not benefit from his constant contact with it, and try to infuse a little of its teachings in his own work. The indifference of the public to photography may account partly for this state of things, as there is little incentive for the worker to improve himself if his efforts are unappreciated.

Some of the Parisian photographers are using sunlight in their studios for many effects, and securing rare results thereby. The usual mode of working is to curtain off all light except an opening about five feet square above and behind one side of the sitter, through which the sun is allowed to shine in full force. Just before exposure a head screen is held just above the subject's head, which flattens the lighting, and a couple of seconds of exposure given for the shadows, then the screen is quickly removed for an instant and the shutter closed. The short sunlight exposure just tips the high lights overhead and drapery, and results in wonderful brilliancy. Good prices are obtained for regular work, which is on mat-surfaced print-out paper, toned to black or sepia. Paris panels range from $15 to $25 per dozen in the better studios, and other work in proportion. Very little carbon or platinum is seen, and, in fact, none of the countries has adopted these processes to the extent it is used in America for every-day portraiture.

What large work is displayed abroad is usually bromide enlargements finished in crayon. Direct work above 11 x 14 is rare, and even this size is exceptional. The latter style of mounts is being used extensively in some places, but, generally speaking, pictures are more tastefully presented here than in Europe.

The professional photographer in Paris, although he quotes his prices at so much a dozen, only occasionally gets an order for the full number. The good (for the pho-

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tographer) American custom of distributing generously photographs among his relatives and friends is not in vogue in France, and the usual order is generally limited to perhaps three or four pictures for only the nearest relatives of the sitter.

THE BUSINESS OF PORTRAITURE.

PROSPERITY seems to have taken her residence in America on the long lease principle. For several years after the disastrous times of 1893 we were pulling ourselves together, and at the same time gradually pulling forward. For the last five years business has been "good." It was growing very satisfactory in 1897, and in 1898 everybody felt like congratulating his neighbor. But things have steadily gained, and to-day the photographer is stronger in prestige, in finance, and in the joy of living than he has ever been.

If ever man did, the photographer has worked out his own salvation. It has been done by a steady upward move and by a genuine natural co-operation, rather than by competition. There have, we all know, been many cases of active, remorseless competition—throat-cutting price slaughtering—more especially among the lesser fry of the fraternity; but such have been but a slight factor among the whole, and of late they have narrowed almost to a vanishing point. The photographer has not made his money at the expense of his brother, but by giving the public better value and a higher grade of work—practically opening new markets by an appreciation of skill. Eight or ten years ago the American photographer could hold his own against the world. He has always been able to do that. To-day he undoubtedly *leads* the world. Ten years ago our patriotic Europe-trotters, after visiting Paris for their gowns, would run over to London for their photographs. These the photographer would mail to this side, in several small packets, so that they might pass the vigilant eyes of the post-office appraisers. Now, although London has some photographers second to none, the names which used to be household words among wealthy Americans are the names of back numbers, and no self-respecting person cares to pit their work as against the work obtainable in New York.

The success of the American photographer is often attributed to natural causes; prosperity is here, and so we say the photographer inevitably shares it. In truth, it is more than that. The photographer is not merely taking the flotsam of good things which the wave of prosperity casts at his feet. He has ventured out and invested for himself his own good portion. And it is in this strong activity of his that the hope for the future lies. And here, too, lies the encouragement for those who consider that they have not received a full share. The future is in their hands, and individual effort will bring personal reward.

Prosperity, we have said, seems to be here on a long visit. The future is full of hope; may it prove, as day by day it becomes the present, to be as full of realization; and may it be many long years ere the word which annually flows from our pen is any but one of "prosperity."

FACTORIAL DEVELOPMENT.*

BY CLAUDE RIPPON.

IT was in 1894 that Mr. Watkins first brought out his system of factorial development, and it is worthy of note that previous to that date he had regularly practised tentative development with pyro-ammonia. I do not propose to go over again all the history of the subject, or to describe in detail the numerous experiments which induced Mr. Watkins to formulate his law as to factorial development. The experiments have now been before the public for over seven years, and I have not yet heard of any scientific observer who has brought forward any facts sufficient to

* Paper read before the Oxford Camera Club.

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throw doubt on the accuracy of either the experiments or the deductions made therefrom. On the other hand, other experimental work has been done that has corroborated that of Mr. Watkins in a remarkable degree. The deductions Mr. Watkins arrived at may be briefly stated as follows: That all developing agents will give equal density if allowed to act for a sufficient time; that bromide holds back the lower tones temporarily; but as shown by Messrs. Hurter and Driffeld it must be added before development is begun, and even then with lengthy development the tones come back to the original ratio; a difference in the quantity of alkali only alters the speed of development and not the gradations. Other things being equal, the longer a plate is being developed the greater the contrasts, and *vice versa*. Finally, Mr. Watkins deduced the important law "That any change of temperature (within limits) or of amount of alkali (or of strength of developer with most developers) which lessened or increased the time required for a certain amount of contrast (or density) also altered the time of appearance of the image in exactly the same ratio." Or, in other words, that using the same developer the ratio between the time of the first appearance of the image and the total time of development was always the same for the same density. To make this plain let us take an example. Suppose we expose two plates on the same subject for the same length of time. We take one and pour on it a developer at 65° F., and after it has been covered for one minute we note the first sign of an image; then supposing the factor of the developer is six, we leave it in the solution for six minutes. Now, take the other plate, and develop it with the same developer at a temperature of 45° F. In this case nothing will probably be seen of the image for two minutes, but again multiply by six, and leave in for twelve minutes. It will then be found that the two negatives are identical, though one was developed for a total time of six minutes and the other for twelve.

Now, it is a curious fact that with all the developers on the market, except pyro and amidol, the amount of the developing agent present in the developer makes no difference to the developing factor, but with pyro a great difference results within certain limits, so that with this developer the same factor can be always used, and the density varied by diluting the developer. Developers generally may be divided into two classes: (1) Those that give detail readily, and density only after a long period, such as metol, rodinal, and weak pyro. (2) Those that give detail slowly, but density very quickly, such as hydroquinone, strong pyro, and adurol. The first class have large factors, and the second very small factors. An intermediate developer is probably the best for ordinary work, while the mixing of a developer of each class has advantages, the combined developer having a factor in proportion to the amounts of the different developing agents used. I would, however, at this point like to warn workers that Watkins' factor law does not appear to be correct for some of the mixed developers—that is to say, that a difference in temperature will alter the scale of gradation. In a photographic journal a short while ago a writer signing himself F. C. L. gave the result of a series of experiments relating to the effect of temperature on the action of different developing agents. He found that a drop of 20° F. from a summer temperature had a very different effect on different agents.

In Pyro the image was twice as long appearing.
In Ortol the image was five times as long appearing.
In Quinol the image was four times as long appearing.
In Metol-quinol the image was three times as long appearing.

In the first three the gradation of the negative was practically the same in hot and cold when the same factor was used, thus corroborating Mr. Watkins' experiments; but in metol-quinol the gradation was much less steep in the cold than the warm. This, however, is only natural if we consider for a moment that quinol, the density-giving agent in this combination, works four times as long with a drop of 20°, while the period previous to the first appearance of the image is only three times as long in the combined developer. It is obvious, therefore, that to use the factor method with this developer, it is necessary to always develop at approximately the same temperature. The factors of some

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of the most-used developers are given by Mr. Watkins as follows:

Pyro-soda.	1 grain pyro ¼ grain bromide	9
"	2 grains pyro ½ grain bromide	5
"	3 grains pyro ¾ grain bromide	4½
"	4 grains pyro 1 grain bromide	4
"	8 grains pyro 2 grains bromide	3¼
"	Ilford Maximum pyro	4½
"	Ilford Minimum Pyro	5½
Hydroquinone		5
Metol		28
Rodinal		40
Ortol		10

It would be well if, before adapting this method, photographers would try and comprehend what it all means, and not use the law in a blind way, expecting it to automatically turn out a perfect negative from every exposure. Of course, if everything had the same range of tones, then with the help of an actinometer it might be possible to produce good negatives with automatic precision; but, fortunately or unfortunately, subjects vary very much in that respect, and in the cases of very long range or very short, the results have to be to a certain extent falsified to obtain satisfactory and pictorial results. For instance, in a dark interior with clear glass windows the exposure should be very full, and the factor used should be smaller than that generally adopted. Again, in a distant landscape where the range of tones is very short, a brief exposure and a longer factor will produce the best results. What should be borne in mind is that length of development regulates contrast, and that the factorial system enables the worker to regulate length of development. Each man should find out by two or three experiments what factor best suits his developer and his favorite printing process in average work, and then raise the factor or lower it, according to whether he requires his finished print to have harder or softer contrasts than the original subject. A great point about the system is that slight errors in exposure have practically no effect on the resulting print; all that happens is that the negative takes a long or short time to print, according to whether the exposure is too long or too short. I have two sets of prints taken from twelve negatives. The first six are of an interior subject, and under identical conditions were exposed for 3, 6, 9, 12, 15, and 30 seconds respectively. The other six were exposed on an exterior subject, again under identical conditions, for 2, 4, 8, 16, 32, and 64 seconds. The differences in the results are very slight, and in five of the prints of the outdoor subject practically negligible, notwithstanding that the original negatives were on special rapid plates (Imperial), and that in the first series the proper exposure was about 30 seconds, and in the second series about 4 seconds. It is worthy of note that the difference in the exposure altered materially the time at first appearance of the image. In the interior six the image appeared in 130, 120, 115, 110, 100, and 90 seconds; in the exterior six, it appeared in 100, 90, 75, 70, 65, and 55 seconds. It is evident, therefore, that the time of first appearance of the image depends on the length of exposure as well as the composition of the developer, the temperature, and the intensity of the light at the time of exposure. Developers that can be used over and over again are of doubtful value under this method after repeated use, as increase of bromide obtained from the plates during development may gradually alter the contrasts, especially with those that give density quickly. The best method is to use a pyro-soda developer so constituted that it will give good results with a factor of 6. This is what Mr. Watkins styles his sextuple method, and it has two great advantages. In the first place, it does away with any mental arithmetic, for the number of seconds that elapse before the image appears only have to be divided by ten to give the minutes that total development will last. For instance, if the image appears in 40 seconds, total development will occupy 4 minutes; if it appears in 55 seconds, the total time will be 5.5 minutes, or 5½ minutes. Secondly, pyro being the developing agent, the contrast of the negatives can be altered by the amount of the dilution of the developer, without changing the factor.

In my own work, however, I must own that I prefer altering my factor to changing the strength of the developer, but that is purely a matter of personal convenience. I can say most truly that ever since I have adopted factorial development, some two years ago, I have obtained from my exposures a far higher percentage of good printable negatives than I ever got before.

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I sincerely hope that any members who have not yet done so will give the factorial method a trial, using the factor law in an intelligent way with a view to getting the results they require, and not as a sort of automatic machine, which has only got to be set in motion to produce a perfect negative every time. The process is one that is specially useful to the amateur. Pyro can be used without any fear of getting the fingers stained, for the plate need never be removed from the dish until development is complete. There is no need to look through the plate, therefere it does not matter if the strength of the dark-room light is not always the same. But one of the great advantages of all is that, even if no developing has been done for a considerable period, good negatives can be got immediately on resuming work, and there is no fear of spoiling half a dozen plates before one has got back the knack of judging density.

Before concluding I should like to impress on you one important point, and that is that the time of first appearance should be estimated from the first sign of that part of the negative that the photographer wishes to appear as practically white paper in the final print.

IMITATION CERAMICS.

BY R. STANNARD.

To make a *good*, not a worthless, "imitation" burnt-in picture is not more difficult than to follow several other processes of photography which are more or less worked. To make the genuine vitreous enamel is a task beset with a hundred irritating little difficulties, and one in which many good men have come to grief.

The imitation enamel is not necessarily a cheap line; it may legitimately be used as a specialty in a high grade of business, and may be made as beautiful and as permanent as the genuine burnt-in variety. Indeed, one of the defects of the enamel is avoided, for the soft glaze which is sometimes used in the latter has an unhappy tendency to shell off in little scales. The process to which we allude has been several times patented, we believe, and fifteen years ago it bade fair to become a fashionable specialty in Europe. But it was boomed at the wrong time, and the universal craze for the dozen carried all before it. Briefly stated, the imitation enamel is a carbon transfer onto porcelain, or some similar vitreous support, and it is then japanned instead of being covered with the genuine glaze of the real ceramic. To define japanning—this is simply covering the surface of the print with a suitable varnish in several very thin layers, and eventually welding the whole together by baking for a considerable time in an oven of very moderate temperature.

As far as getting the carbon print down on the porcelain, or on glass, or metal, or any impervious material which will stand heat, the procedure is the usual carbon method. It is advisable to use a tissue that contains a minimum of gelatine and a maximum of pigment, this being to a certain extent porous. This will allow the first layer of varnish to more or less penetrate the film and so bind all more closely to the support. Of course, any color of carbon tissue may be used.

There are two kinds of varnish very suitable for this work—amber and copal. The amber varnish dries with slightly the harder surface; but a good brand of copal is almost as hard, and has the very material advantage of being clearer and whiter. Whichever kind is used must be of the variety known as "stoving" varnish, for not all varnishes are calculated to resist the heat of japanning. A very thin coat of the varnish is put on with a camel's-hair brush, and this must be thoroughly dry and hard before a second coat is applied. The plaque may be placed in a moderately warm place—of course, free from dust. The penalty of putting one coat over another before the first one is absolutely bone dry may be innumerable little cracks caused by unequal contraction. It is, perhaps, advisable—for it helps the thinness of the coating—to mix the first layer of varnish with an equal quantity of turpentine.

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Brush marks need not be worried about, for they will disappear during drying or during the final stoving or polishing. When a sufficient thickness of glaze has been obtained by repeated coatings and dryings, the enamel is ready for stoving. We have used the oven of the kitchen stove for this. The heat must be moderate —200° F. is as high as it should go, and it *may* sink to 50° lower without any ill effect. But the stoving should last for five or six hours at least. The enamel is then allowed to cool. When thoroughly cold its surface must be polished, beginning with pumice powder, and finally finishing off with putty powder, as lenses are polished. A very high surface polish is thus obtained, and if a suitable varnish has been chosen, the surface will be very hard and durable.

From this description it will be seen that we were right in describing the process as "not a cheap one." There is no absolute difficulty in it, except the difficulty of taking pains, and this at least prevents the enamel from becoming common or cheaply fashionable. There is no sound reason why ceramics produced by this method should not be pushed as a business line, for they are of honest manufacture and value, and are, too, a line in which the photographer may take a legitimate pride. In making the genuine enamels the difficulties have always tended to increase with any increase in the size of the plaque. This is not a difficulty to the same extent in the line at present under consideration.

One of the great merits of high-grade miniatures—from a commercial point of view—is that they may be colored. These enamels may, of course, be tinted or colored to any extent desired before the carbon tissue is japanned.

MINIATURES.

BY F. B. WATSON.

THE miniature photograph, which has already won a certain measure of discriminating popularity, has, I believe, if properly worked, a great future before it. Perhaps I am rather a crank on this class of work, for years ago I commenced it as a special side line, and have given prominent place to miniatures ever since. It was in the dark days of 1893, when our town was hit about as badly as most. As trade was scarce, we photographers, with the sage wisdom that used to (and I fear sometimes still does) mark the fraternity, tried to make it worse by cutting rates. The man who was my nearest competitor lowered his prices from $3 to $2 a dozen, and later he gave a free 8 x 10 enlargement. I had followed him in price, and when he went for an enlargement I looked out for something original, and went for a *framed* miniature. The frames, if I remember right, cost me 3 cents each, and, of course, the "miniature" was just one of the prints trimmed down. The idea seemed to suit, and I managed to hold on until better times. Since then I have studied the making of miniatures, and the effort to satisfactorily compose a head and shoulders, or a half-length, into a small oval space, has, I think, improved my regular work.

I urge an attention on miniatures to those who, like myself, are doing a regular trade at from $3 to $4 a dozen, but I would like to hear of some big man making a specialty of them. Mr. Core, by confining himself to children, or Mr. MacDonald, by taking men only, have drawn many a photographer's attention to the fact that every different age and each sex should have a different treatment. If the same were done for miniatures it would be a real lead to some of us. It is a great help to occasionally see such work. What a delight it was to me to see those four miniatures of Mr. Benjamin's in the MAGAZINE of last year. One of them was probably chosen from a larger print; the others were evidently taken as miniatures. And there were miniatures by Mr. Hoyt and Mr. Brenner and one or two others in the last issue of MOSAICS. I would strongly advise those who have them to *study* them as I have done.

The miniature is a recognized form of art, and in a good miniature a great mass of very delicate and minute detail is pleas-

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ingly fitted into a very small space. It has no connection with low prices. When we went for the midget it was perhaps necessary, but the theory of the midget is a mere saving of paper and chemicals. By printing twelve 2 x 2 prints on one sheet of 8 x 6 paper we are able to do a cheap line. But with the real miniature there is so much skill that the price won't be cut. It is when we see a real good miniature that we can feel how poor our photography really is. I might look at some "new school" work for a year without being impressed, but when I see in tiny form the whole of a beautiful picture, good posing, good lighting, well printed from a good negative, then I can doff my cap. The miniature can be arranged for oval, or square, or round, and may be so small as to fit in a locket, or large enough to hang on the wall or stand on a table. And a miniature is seldom delivered except complete—that is, put in a neat, tasteful frame, which should leave a reasonable profit for the photographer. It can be sold for almost any price. High-class photographers can turn out their beautiful platinums or carbons, and we can make our aristotype prints. They can be printed and colored on real ivory, or we can make them on one of Seed's opals. What about price? That is what every photographer must fix for himself. When I can trim down a print from the negative from which a dozen cabinets are being printed, I charge 75 cents, in a frame which costs me 10 cents. I often make a special negative for my customers who have money with the intention of making a miniature. I get $2.50 for it in a frame which costs me 60 cents—it is worth fully a dollar to them. Sometimes I get orders for colored ones at a higher price, but these I send away to be colored.

I have found money and pleasure in my specialty; but what we want is some real leader who will confine himself to miniatures, and by showing them at the conventions and in the papers let us see what real good work may be done. This will help us and will make miniatures popular.

PRACTICAL ADVERTISING.

The Kind that Brings Business.

BY CHARLES P. MARSHALL.

TALK NO. 4.—ONE THING AT A TIME.

In *brevity* lies strength, not only in arguments, but in articles.

Which reaches the mark the quickest, the sling-shot, or the Mauser missile?

Which has the most potent penetration, the patter of bird-shot or the ping of bullet?

Doesn't the locomotive outstrip the stage coach, and the *dart of the eagle* put to ridicule the skittering flight of the woodcock?

Doesn't a sharp-pointed nail struck with a hammer get there quicker than a handful of blunt spikes hit with a maul?

Look at the jockey behind JAY EYE SEE. Does he drive with a slack, indifferent rein, putting the thoroughbred through a medley of pace, run, canter, and gallop? Not if he has an inkling of an idea of *winning*. But look! a straight, stiff rein guides the gelding to the goal in a *swift*, uncompromising trot. (Inwardly you admire that jockey's skill, and begrudge him not his salary; the years he has toiled with the temperament of the trotter certainly cut more coupons than the stable boy's time devoted to rubbing down legs and mixing mash.)

The fairest and most forcible criticism made upon advertising is "too much matter at a time," "too many points presented at one time."

You would silently smile at the hunter who selected a Sheffield blunderbus to down a deer with, instead of a Marlin repeater. He might rejoice in the smoke and roar of the old toy, and gaze with wonderment at the shower of splintered twigs and riddled leaves; but the venison his mouth watered for goes bounding over the next ridge into the crack of the rifle of a wiser nimrod.

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You may mix many good points in one advertisement and lose the whole force of your arguments. It isn't *how much*, but HOW STRONG, that makes the mint-mark of merit in an ad.

Wise advertising is like wise living, where the variety is from meal to meal instead of from course to course. The former offends not physical digestion; likewise, variety in advertising from issue to issue offends not mental digestion.

Suppose a woman wants a shirt-waist. She steps into a store where she supposes good goods are sold. On the counter in front of her are piled shoes, laces, dress goods, pins, parasols, stockings, tape, ribbons, shirt-waists, and tinware. What interest will she have in the mix-up? Very little; perhaps none. She has an idea that the goods are reputable, but immediately resents the *hodge-podge display*, and all the affability of the salesman cannot counteract her first impression, disgust; she turns away—THE SALE IS LOST!

Follow her to the next store. Behold the change! She hasn't gone a yard inside this orderly emporium when a smile of approval sweeps her face. The ribbons repose by themselves; shoes stand in tempting series; the insignificant pins pose in their papers, in prim but salable shape; parasols shed their tender tints in gorgeous profusion from above; and tape, too, tries to tease a sale by its symmetrical attitude (tinware, which she didn't see, was down in the basement, where it belonged); while SHIRT-WAISTS, just beyond, fairly fling their merits at the feet of my lady; and within a short half hour several departments have profited by that woman's patronage.

To be sure, she only had shirt-waists in mind when she started, but order and oneness in display simply won her praise and purse.

The photographer's ad. that tells of toning, mentions mounting, presents the possibilities of posing, suggests suitable time to sit, calls attention to the latest conceit in cards, invites inspection of new quarters, mixes the merits of miniatures with the inimitable qualities of Indian-inks, all in one, is simply a *photographic melée*. The ingredients are all O. K., but human nature resents HASH in any form.

Did you ever hear of the old darkey who had the pickings of the feast all in a bowl? There were *pickles*, *fruit cake*, *salad*, *coffee*, *ice cream*, *sherry*, *celery*, and *duck*. When asked how he liked it replied, "There's a heap a good tings dar, Massa; but somehow it don't taste tergedder."

In a nutshell that's the malady of most advertising, TOO MUCH VARIETY.

People will not read such, much less believe such, and surely will not patronize such. The eye is offended, the mind is offended, and the purse puckered up into solid silence.

The man who wrote it labored hours to get in all he could. It sounded *smart*, and his friends told him it was "out of sight." But how soon he discovered the sad truth in the compliment. It *was* out of sight, because not read; customers were out of sight, because not read; and money was *way out of sight*, because NOT READ!

Money-making merchants never advertise simply to patronize the printer or because their neighbors "run an ad." They secure space in newspaper columns to sow the seed of trade—good advertising.

If we plant poor advertising, the harvest will match it. If we plant mixed advertising (most as bad as miserable advertising), we will reap an indifferent crop.

Sow a mixture of wheat, corn, barley, rye, oats, and clover, and you'll harvest hen-feed e-v-e-r-y time.

Wise ones who wish to feast in the future sow wheat in one lot, corn in the next, and so on and *sow on*, never ceasing. Then, when threshing time comes, they know to a certainty there's enough to pay the thresher (printer) and abundance to put in the granary.

Let *one thing at a time* be your watchword. Carry it out in the studio display. Show your prints more in masses. A choice collection of cabinets on the wall convinces more customers than if scattered among other sizes. Miniatures will make a quicker sale if displayed near each other, and not sandwiched between carte-de-visites and other odd sizes. Large portraits, too, if hung together, stand more chances of securing an order than if consigned to some "big space that seems to need it."

Although you are a dealer in art, the esthetic must not overrule the *practical*.

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THE BULLET OF BREVITY.

Ads. like this will bring you money if you keep them up.

SARONY'S PHOTO-NEWS

When baby wakes up !

all smiles and dimples, all radiant and rosy, chirping and cooing,

then is a splendid time

to "take his picture." Then, all his pretty, winning ways are ready and ripe

for a fine photograph

just the kind we make. Consider for a moment how pretty your little one will look in one of the swell new styles.

Here's the Philadelphia Panel

a most suitable selection, which makes every tiny tot a double joy to the recipient. Bring the baby to-day, it's getting toward Xmas, and you will need the photos early to mail to distant friends.

BROADWAY STUDIO. TAKE ELEVATOR

THE BUCK-SHOT OF BUNGLING.

Ads. like this will bring you misery if you keep them up.

We've got a slick line of photographers' supplies for amateurs' benefit. We get them every little while and want to recommend them because we use them ourselves. We sell them at prices too our competitors can't touch. We also do finishing for lots of amateurs. We develop and print cheap. We also carry the newest kind of cards that are very much liked by our customers who deal with us because we suit them better than any other gallery. See our miniatures and carbons. You can't beat them anywhere else in town. Fine frames of every kind we constantly carry in stock. Prices are *all right*. When you want good CABINETS give us a call. Extra pains taken with old folks portraits. Drop in and give us a call, we have many more things in the photo. line that will be sure to please you.

MALLONY GALLERY

151 SIPHER STREET

Remember, you are after *orders* as well as honors, and a practical, working display, dignified by being on the wall, cannot be ignored.

On the other hand, when you give an exhibition or opening more variation is permissible. Then your reception-room becomes an exhibition purely, and is intended to give a semi-bewildering pleasure.

This applies to the average studio; but where the latter is large and several rooms devoted to display the first room may present more of the exhibition appearance; the others reserved for a practical, working display.

Now, someone may raise the question, viz., "If I advertise only Paris panels in one ad., how will my customers know about my cabinets, etc.?" The answer is, in a large number of readers there are some who are only interested at present in Paris panels, who have them in mind because

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they have seen someone else's. If your argument can induce them to come to your studio it is easy to attract their attention to other styles and sizes. They in turn will advise their friends and acquaintances.

The *next* ad. will preach on *cabinets;* the next after that will sing the song of miniatures; then will follow sound talks on water-colors, next frames, next children's portraits, and so on throughout the year.

Thus you are furnishing *news—business news, readable news, believable news*—to the public.

Thus your good sense in presenting *one thing at a time* in your ads. is gaining the confidence of the public, and the bullet of brevity will surely bring down the photographic game to your feet.

The topic of the next talk will be *What Advertising Can and Cannot Do.*

VELOX vs. METHODS.

BY HENRY HERDEMAN.

I BELIEVE in pushing a good thing when I see it; that is why I use "Velox" for the largest part of my work. I tried to introduce it to a number of my photographer friends, but in nine cases out of ten I could not do so. Their usual excuse was: It being so uncertain in results, required too close watching in the developing solution, etc., the consequence being the loss of too many prints; in short, it was entirely unsatisfactory to them. I investigated all of these claims and found that the true cause of their failure was due to the entire lack of method in handling the paper. There was no method or judgment used whatever in the exposing, developing, or fixing of the prints. Neither (and this is an important point) was there any judgment used in the selection of the proper paper to get the best results from a certain class of negatives.

Following I will give a short account of how I use "Velox," and use it successfully, for I have made as many as five hundred consecutive prints without losing one. The first thing to consider is the choice of paper for the negative you have on hand. It may be dense or thin, contrasty or soft, or slightly over- or undertimed. This cannot be helped, as there is no one who can invariably time and develop his plates perfectly; at least this cannot be done by the photographer who portrays living subjects.

If you have a dense and contrasty negative use "carbon matte," or "special" rough Velox for soft effects. If, on the contrary, your negative is thin and soft through overexposure or other causes, use "carbon" or "special" Velox for contrasty effects. I always keep a sufficient quantity of all the six different brands of "Velox" on hand. This can be done safely, as "Velox" does not readily spoil with age as some printing-out papers do.

The next point to consider is the exposure. For this I use artificial light exclusively, as I find it to be much superior to daylight, with which, owing to its frequent changes, one can seldom get the right time of exposure.

In exposing the print care must be taken to keep the frame always at the same distance from the light.

The most vital and delicate point in working "Velox" is the development. Too much importance cannot be attached to keeping the trays, graduates, etc., perfectly clean. They should be well scoured before and after using, and not used for two or more different chemical solutions. This especially applies to the tray used for developing. It must be borne in mind that the development of the photographic image, either on paper or glass, is one of the most delicate of chemical operations, and must be conducted accordingly.

The lack of knowledge of photographic chemistry existing among some photographers is incredible. There is one here in Cincinnati who when I happened to speak of a "saturated solution" did not know the meaning of the term. This man has had fifteen years' experience in the business. The developing solution should be kept as near as possible at one standard strength, and nothing but pure chemicals should be used. This is specially applicable to the sulphite of soda, which, if allowed to stand

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around in open, uncovered boxes will soon spoil and be the cause of irregular streaks in the print.

I notice a contributor to a photographic magazine recently suggested a remedy for these streaky prints by immersing them in water before development. There is no need of the *remedy*, as the *cause* can be removed by the use of pure sulphite of soda.

Another cause of these streaky prints is the use of too weak, old, or oxidized developer. It costs less to make up a new solution than to use the old one and ruin your prints. I never have trouble through streaky prints, because I take care to use pure sulphite of soda and fresh developer every time. I do not advise the immersion of the print in a tray of water before developing, because each print carries a certain amount of water into the developing solution, thereby weakening the same and making it difficult to keep it at a standard strength.

For a fixing-bath I find a 15 per cent. solution of hypo with a proportion of one ounce of alum to the gallon of hypo to answer all requirements. As the fixing-bath must of necessity be placed near to the developing solution, the utmost care must be used against spilling any of the hypo into the developer, as even a drop is sufficient to stain the prints yellow. I always have an assistant to stir the prints well down into the hypo so as to insure even fixing while I develop them. It is absolutely necessary for the prints to be immediately and fully immersed in the fixing solution after development.

For a developing agent I use metol, because with it only can perfectly pure blacks, like a correctly toned platinotype, or a carbon print, be obtained.

COLLOTYPE FOR AMATEURS.*

BY GEORGE HOLZHAUSEN.

SINCE the camera has become so universally popular as a hobby, and is within reach of the most limited income, it is quite possible for an amateur to go farther, and, by closely following the directions in this article, produce his prints by means of the collotype process with the greatest ease and rapidity.

As the process is a permanent one, and may be applied with equal success to the imitation of platinotype, bromide, silver print, or photogravure, its advantages will be readily acknowledged.

The initial outlay is not a heavy one, and, having obtained the necessary plant for the work, the subsequent cost is small, while the results, if the work is successfully carried out, are most beautiful.

The most important feature in collotype is a dry and perfectly even temperature, which is, of course, more easily found in a private house than in a large factory. If this point is carefully attended to, and the following instructions carried out, failure should be impossible.

Coating the Plates. Only patent plates should be used, as ordinary ones would break when subjected to the heavy pressure required in the printing frames. The most convenient size for beginners to use is 8 x 10 or 10 x 12 x 3/8 inch thick, to give plenty of margin round the picture, as this will prevent damaging the inking rollers. As polished plates are so easily scratched, grind with the finest emery powder as follows: Sprinkle the powder all over the plate, dampen it by sprinkling a few drops of water on it, lay another plate on top of it, face down, and grind in small circles until the plate has a fine mat surface, free from scratches. At the same time take the edge off the plate with an old file.

Plates that have been previously used must have the old coating of gelatine cleaned off before using again, and this is done as follows: Immerse them in a strong solution of potash lye, then scrape the plate with a knife or scraper, scrub well with a brush, and regrind. When dry the

* This practical paper, which is of perhaps more value to the professional than to the amateur photographer, is reprinted from Penrose's Process Year-book for 1901, which every progressive worker should see. —ED. W. P. M.

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plates are ready for the first preparation, made up as follows:

Silicate of Potash . . .	1 ounce.
Beer	10 ounces.

To be mixed together and filtered through a cloth. Before coating level and dust the plate. Pour plenty of solution in the middle, spread all over with a piece of paper, lift the plate quickly, and drain off from one corner through a cloth into a jug, after which place in a rack to dry. When properly dry wash the plate for a minute under a tap to get rid of the free silicate, and dry again. Plates, when coated with this preparation—which is only to make the gelatine adhere to the glass—will keep dry for any length of time.

The plate must now be placed in a properly made drying-box. If anyone can afford to pay for a good one, this may be obtained from Messrs. Penrose & Co., who can also supply everything connected with the collotype process. But anyone with a capacity for handling tools may make his own box in the following way: A well-made box, constructed so that the temperature is equal all over, and fitted with the necessary levelling bars and screws, will answer the purpose. The size depends upon the number of plates to be prepared at one time. The box should rest on supports about 18 inches high, and must not be less than 18 inches deep, as the ledges, to take the levelling bars, must be 9 inches from the bottom of the box. The bottom should be made of galvanized iron, with a layer of gravel spread over it. Four inches underneath this the gas jets or paraffin stove should be put. The box, if possible, should be lined with zinc or galvanized iron to keep in the heat. The top is a hinged frame with canvas stretched over it, so that the vapor can escape when the gelatine is drying. A small hole should be made in the canvas for the thermometer.

Preparing and Drying the Plates. Place the washed plates in the drying-box, level them by means of the levelling screws, and heat up to about 120° F. While this is taking place prepare the sensitive gelatine on the following lines:

Solution No. 1.

Gelatine	2 ounces.
Water	23 "

Soak the gelatine for half an hour or so in the cold water first; then place the vessel in a water-bath, and gradually raise the temperature till the gelatine is melted.

Solution No. 2.

Bichromate of Potash . .	2 drachms.
Bichromate of Ammonia .	2 "
Water	2 ounces.

Put the bichromate of potash and ammonia into the specified amount of water, and place in a jar in a saucepan of water, raising the temperature not higher than 120°, and stirring until dissolved. When the gelatine in No. 1 is thoroughly melted, add the No. 2 solution to it, and filter through good filter paper.

It is most important to have the same proportion of sensitive gelatine on each plate, or mistakes in exposing the plates will surely be made, as a thin coating would take a much shorter time to expose than a thick one. Each plate should have four minims to the square inch; therefore, to find out how much to put on a plate, find the number of square inches and multiply by four. For instance, a 10 x 12 plate equals 120 square inches; this multiplied by four gives 480 minims = 1 ounce.

The preparing-room must be kept warm or the gelatine will set on the plate when coating. Now, take the plate from the drying-box, place it on the levelling stand, level, dust it, measure out the gelatine, and pour it on the left-hand side of the plate. Raise that side slightly and allow it, with the help of a piece of paper, to flow over evenly. Dispel all air-bubbles, lift carefully, and put again in the drying-box in exactly the same place as it was before. The plates will dry in one to two hours in a temperature of from 120° to 140° F. When dry they are sensitive to light and ready for exposing.

Exposing. For the purpose of exposing a frame is required similar to that used by process block-makers, with a ½-inch plate glass, but without springs or screws, as the frame may be more satisfactorily tightened up by the use of wedges placed under strong wooden bars attached to the sides of the frame. Place the negative face upward on the glass in the frame, put the collotype plate on top of it, and press them closely into contact by means of the wedges. In order to obtain clean margins put some

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black paper on the back of the negatives, which must be reversed; and the simplest way to make these is to put the plate for the negative in the dark slide the wrong way round, but the thickness of the glass must be allowed for in focusing. If two or more negatives be used for the printing, put some strips of India rubber on the back of the negatives and tinfoil the fronts, so that no light can pass through. Great care must be taken to leave no dust or dirt between the plate and the negative, or the negative and the plate glass, or a breakage will result. The printing must be judged by looking at the plate from the back. When the picture shows fairly distinctly in a dark-brown color it is probably sufficiently exposed; but if some parts are finished more quickly than others, make a mass and cover such parts, leaving the rest to go on exposing. The right exposure can only be learned by experience, but a good way to gain this is to try the same negative several times on one plate, till perfect, and with the help of an actinometer the correct exposure will soon be discovered. When the exposure is complete take the plate from the frame in a yellow light, place it in a dish or tank, and wash with water. It should remain in the tank, with changes of water, for about three or four hours, until all the yellowness has disappeared and the picture is almost invisible, but it will show up slightly in relief on the gelatine. When sufficiently washed take from the tank and hold under running water for a few minutes. Then clear the back from waste gelatine with a scraper, wash again for a few seconds, and place in a rack to dry, where it should remain for seven or eight hours before printing.

Etching and Printing. Plates must always be etched before rolling up, or they will take ink all over. Put the plate on a levelling stand and etch first with cold water for five or ten minutes, after which take the water off with a sponge and dab with a soft cloth until all the water is gone, then etch with the following solution for about half an hour.

Thick Glycerine	2 parts
Water	1 part.

This solution is only for correctly exposed plates.

An under-exposed plate must only be etched for half the above length of time. For over-exposed plates it is advisable to add a few drops of ammonia to the etching solution until it smells strongly. This will help to soften the gelatine and, therefore, assist the etching.

Two kinds of rollers are used in collotype printing—the nap and the gelatine roller. The leather one is for inking up the shadows of the plate. The gelatine roller is used to improve the half-tones and make the picture look smoother. When the etch is taken off, which must be done with a clean sponge, dry the plate with another soft cloth and see that the back is quite clean. Lay a piece of clean white paper on the bed of the press and place the plate on this, tearing off the margin of waste paper all round. Fix the plate by means of screws or other arrangements for the purpose, which will be provided with the press.

A litho-stone can also be used for a printing bed. Sprinkle a few drops of water on the back of the plate and press on the stone as firmly as possible, giving a very slight movement backward and forward until the plate begins to hold, and it is ready for printing.

Only good collotype inks should be used, mixed with a little thin litho varnish, and when beginning to roll up have the ink very stiff. First roll with a fair amount of pressure over the plate, and, if it refuses to take the ink, try rolling very slowly and put in a little more litho varnish, slightly increasing the pressure. If the plate refuses to take ink altogether after this has been done, it is probably due to either under-exposure, over-etching, or too cold or damp a room.

Should the plate take ink all over after putting in more varnish, dip the etching sponge in the solution and go over the plate without washing out the ink. This will make the print brighter. Should it still be flat, wash out the ink with turps, dry with a waste sheet of paper in the same way as blotting paper is used. Go over with the etching sponge to take away the grease, and then pour some etching solution on the plate and leave it for ten or fifteen minutes. This, as a rule, will make the plate work satisfactorily.

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When using ammonia in the etching solution, always etch again afterward without ammonia, as it takes a long time before the ammonia evaporates out of the plate.

In all these cases an experienced printer would be able to get good results where a beginner would perhaps fail, so it is advisable to keep a note-book for reference, and always remember that the greatest enemies in collotype are cold and dampness.

PHOTOGRAPHY FOR THE PRESS.

MR. H. SNOWDEN WARD, editor of *The Photogram*, is a journalist who has done perhaps more than any other worker on the photographic press to awaken photographers to the value of photographs as a feature of the modern press. At a meeting of the Photographic Club a few weeks ago Mr. Ward gave an interesting chat upon his favorite topic, intended to remove the misapprehension which exists in the minds of many photographers desirous of submitting photographs for reproduction in the illustrated press. There was a tendency to suppose that editors would pay anything for a particular photograph; but the extortionate demands that had been made had at last induced several papers to retain their own photographers to do their work instead of accepting the existing work that was offered. Free-lance work for the illustrated press seldom, if ever, paid. If a man intended to take up press illustration work he should consider his free-lance work only as a means of introducing himself. Unless a man be a specialist he cannot get commissions by simply offering to do certain work. He must submit things that are likely not to please the public, but to please the editor. It is he who must decide what pleases the public, and this means a good deal of difference. In considering the papers to which one proposes to submit work, it is well to consider not merely the cash question but the degree of advertisement to be gained by the publication of one's photographs. The man whose work and name appears in three or four papers of good class fairly frequently was more likely to get other commissions than the man who figures in a score of papers of lower standing less frequently. It was well to specialize as far as possible. The case of the Brothers Kearton was cited as one in which patient efforts, combined with a connection with a well-known publishing house, had resulted in their being universally recognized as bird and nest experts. It was further very essential that all photographs should be accompanied by a full description, or the picture should be so far a series and attractive that the editor will undertake to write around them. It was curious how many people seemed to think that a railway smashup was suitable for a monthly magazine, whereas they rarely, if ever, used pictures of the sort. The lecturer said that America presented a good field for reproduction rights among the better class papers, which, he contended, were very particular to pay any reasonable price. Three guineas was commonly paid for the right of reproducing a portrait from England—more, if necessary; but if the photographer insisted on twenty guineas then the paper fell back upon its strictly legal position, reproduced the picture and paid nothing. The subject-matter of the photograph must tell the owner whether he should approach the magazine or the weekly or daily press. Again, it should be remembered that the editor prefers to deal with those who have a complete series of photographs, instead of going to a number of men, each of whom has a little of what he wants. An important factor, often disregarded, was the holiday season. Even editors took holidays when things were slack, people away, etc.; at such times they make prior arrangements, and the sub-editor has orders to buy only very important matter. The question of fees was a difficult one, but, all things considered, the following scale was given as an elastic basis: 4 x 3, $2.50; 6 x 4, $5; half page, or 9 x 7, $15; whole page, $25 to $50.

American photographers seeking the sale of newspaper pictures to English journals should apply to Mr. Ward by letter, care of the Illustrated Press Bureau, 10 Norfolk Street, Strand, London, W. C.

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INTERIOR PHOTOGRAPHY—A WRINKLE.

I WOULD never have thought that any photographer making a specialty of interior work would be ignorant of the method by which I sometimes render windows without halation, and at the same time avoid dead shadows in a room. But more than once I have been questioned as to how I have got some special picture, and the questioner has seemed surprised when I explained what to me appeared so obvious. In looking at a picture of an interior we, as photographers, almost unconsciously look to find how it has been done, how and where lighted, and what probable difficulties have been surmounted. We scarcely look for pictorial work in the true sense, but are inclined to be critical on technique. In the pictures of which I speak, the room may be taken from a point opposite the window, and the latter clearly shows quite free from halation, and if wished with the view showing beyond the window. The method is simply to make a flashlight of the room after dark, and then, leaving the camera in position till early dawn, make a second exposure, as though for outdoor work, showing the window-frame and the view outside.

The double lighting has not proved to be a disturbing factor. If possible I place the lamp behind the camera and above it; this gets rid largely of any transverse shadows.

In facing a window, dark night without and flashlight within, the room is reflected in the window as in a mirror. This much worried me on my first exposure—I had quite overlooked so obvious a thing—but I found that as long as direct reflection of the lamp did not appear there was no ill effect. Doubtless the slight image impressed on the plate was submerged under the strong light of next morning.

My usual method is to stop down fairly —say to *f*/32—for the night exposure, and then to stop down to *f*/48 or *f*/64 for the morning effort. Cap the lens, turn the key in the door, and be on hand bright and early in the morning. I have found a strong tendency to overexposure in the morning. The light is much stronger about sunrise than about sunset, and, of course, an outside view, especially if the room is in the country and looks on distances, requires much less relative exposure than an interior, or even than a portrait. If a correct exposure is given, there is no more need for backed plates than in landscape work. I find that the daylight seems to be more a benefit than the reverse to the interior of the room. The disadvantage which has been urged against this method is uncertainty of exposure. I am inclined to think the reverse, for with the flashlight a more certain exposure is obtained than with a long exposure in daylight, and with much better renderings of dark corners.

Such a method of work is not applicable to all cases, but it is a useful specialty. If I were a pictorial photographer, instead of a bread-and-butter photographer, I think I would make a strong exhibition line of these composite "interiors with view." I find them commercially useful, but sometimes have difficulty with customers who want the method applied in unsuitable cases. Then, too, flashlight is not approved in all drawing-rooms (though I believe this is very seldom an obstacle if the photographer's appearance inspires confidence), and it is not always possible to have the use of a room overnight together with an entrance in the morning. But whenever I see an opening for a satisfactory picture (and for satisfactory people), I try to explain the whole theory and practice to my customer, and so either have the offer declined or the whole agreed to before I commence.—E. W. G.

BEFORE attempting local reduction of a negative by any method, it is well to make a good transparency to prevent its loss if local reduction should ruin its printing quality.

A SKELETON box frame covered with fine muslin is a convenient drying closet for newly-varnished negatives or for drying negatives after washing.

BELITSKI'S reducer: Potassium ferric oxalate, 10 grains; hypo-soda, 80 grains; water, 1 ounce. This may be used for local reduction.

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AMERICAN PORTRAITURE: I.

Jarrett Bros., Pittsburg, Pa.

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AMERICAN PORTRAITURE: II.

Jarrett Bros., Pittsburg, Pa.

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AMERICAN PORTRAITURE: III.

Jarrett Bros., Pittsburg, Pa.

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AMERICAN PORTRAITURE: IV.

Jarrett Bros., Pittsburg, Pa.

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AMERICAN PORTRAITURE: V.

Jarrett Bros., Pittsburg, Pa.

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AMERICAN PORTRAITURE: VI.

Jarrett Bros., Pittsburg, Pa.

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AMERICAN PORTRAITURE: VII.

Jarrett Bros., Pittsburg, Pa.

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AMERICAN PORTRAITURE: VIII.

Jarrett Bros., Pittsburg, Pa.

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OUR PICTURES.

We begin our new volume by illustrating the first number with the work of a single studio, that of Jarrett Brothers, Pittsburg, Pa. In this way our readers are enabled to judge intelligently of the work put out by Jarrett Brothers and acceptable to the people of Pittsburg. The variety of the work is instructive also.

Messrs. Jarrett Brothers began very humbly some years ago, and have been very successful. They have not aimed at ultra effects, but have kept to the styles and fashions with which the picture-loving public is familiar and accepts with satisfaction. Almost all their work is finished in platinum. In it we see that the photographers strive first of all for likeness, then for a characteristic pose, and finally for technical and pictorial effect. There is a carefulness and a thoroughness about the work which must have a strong influence with the public. We selected the examples reproduced from a small collection of prints brought to our table by Mr. Jarrett while on a trip to New York with his wife. The pleasure of meeting an old subscriber was intensified by the improvement and growth evident in his work as here shown. Apart from the simplicity and naturalness of the poses shown, Messrs. Jarretts' work is notable for the care taken to space the subjects properly. From this point of view they offer a series of practical suggestions. The value of any picture can be enhanced by the spacing, or arrangement within the picture space, of the principal object or objects of interest. The point is one often overlooked.

The frontispiece is peculiarly happy as far as treatment of the subject is concerned. Here the photographer gives us a picture which is first of all a speaking likeness of the child, freely and gracefully arranged, harmonious in values, and full of life and action. Such a portrait is the best advertisement a photographer could desire.

In some of the others there are minor faults, which here and there have been accentuated, unfortunately, by the process of engraving. But, on the whole, Messrs. Jarrett Brothers are turning out work worthy of honor, and work which will surely win for them an increasing volume of business.

DOUBLES.

BY LESLIE MURRAY.

"The twentieth century novelty; come and shake hands with yourself." Such is the announcement in a photographer's showcase, and he emphasizes it by some good examples of doubles—people greeting themselves, or playing chess, or in any of a dozen ways, showing that it is possible for persons to be beside themselves. All the novelties that attract the public are novel to them only—not to those engaged in photography, and the occasional production of a double may be useful to good grade men. For many men doing a medium class of business this style may prove quite a useful specialty.

Of course, the easiest way to rig up a camera for doubles is to write to Peter Diller or H. A. Hyatt for a duplicating holder. The method of manufacture is simplicity itself. Inside the camera two doors are fixed, like cupboard doors, just meeting in the centre of the camera. These doors must be built fairly true, but without binding. They work on hinges at the side of the camera. (It is well to rig up an old camera, if you have one, for this work). One bit of wire on each door works in a hole cut in the bottom of the camera, and another bit comes through the top of the camera. These form the hinges of the door, and by means of the ones projecting through the top the doors may be turned back one at a time against the side of the camera. If this hole is carefully made there will be little chance of light getting to the plate through it; and the focusing screen thrown over it will make it quite secure. The doors should be

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at least one inch from the plate, using a plate about 5 x 7. This allows enough of a vignetted edge to each half to prevent any joining showing in the picture. If the doors are too near the plate the print may look like a double printed one, and so spoil the effect. The sitter is posed in such a position that he falls entirely on one-half of the plate. This is exposed, the cap replaced, the door closed over the exposed half and opened over the unexposed half. The sitter then moves round so that his image will fall on the second half of the plate, and the second exposure is made.

If a dead black continuous background is used the whole can be done without any special arrangements, just making a double exposure and capping the lens as the sitter changes his position.

Doubles are specially useful in the case of theatrical or similar people, where two well-known characters may be represented together, or the one character in a dual rôle; for policemen, firemen, and others who don uniforms, a taking picture is one showing full war paint side by side with one showing private dress.

The photographer should be very careful, at least in those specimens which are for display, to see that the personality of the two sitters is understood at a glance. If a person is taken with one full face and one profile, many who see it for the first time won't "catch on." Full-face pictures are usually the best, not only for showcase, but for pleasing the customer. A profile may please the latter's friends, but he himself best knows his face from a full-front mirror reflection.

SNOW PHOTOGRAPHY.

A Few Practical Hints for Beginners.

BY REV. F. C. LAMBERT, IN "THE AMATEUR PHOTOGRAPHER."

PERHAPS it will be most helpful to the beginner if we endeavor to group our various hints under some three or four general headings.

General Preparations. First of all, to give one bit of advice, which, if neglected, may render all the other hints of no avail. This first, and most valuable, of all is, get your preparations made in advance, so that when the snow and frost do come you will be able to rush out at a few moments' notice. Bear in mind two things, viz., frost and snow often come upon us unexpectedly—a damp, muggy, dull night may give place to a bright, sparkling, cold and crisp morning. Any day in November, December, January, February, or March we may wake up and quite unexpectedly find our window pane a network of floral design in ice crystals, the trees outside lined and festooned with sparkling white crystals, the shrubs and ground overcast with a mantle of freshly fallen snow. Another thing not to be forgotten is that *while* we are getting ready, which may take a few minutes only or may necessitate a journey to the nearest dealer in dry plates, the effects are going or may be gone. Half an hour's sunshine may cause the very effect we desire to vanish away. Speaking generally, it is not a good plan to keep unexposed plates in double backs for any great length of time. But if all be ready (plates, dark slides, lamp, matches, etc.) it should not take more than five minutes to light up, fill three double backs, and be out of your dark-room again. But all else should be kept in readiness in the camera case. From time to time overlook your camera and dark slides to see that all parts move freely. The shutter, rubber tube, and ball require an occasional look. Rubber goods should not be kept in a very cold or a very warm place. In either extreme they are apt to harden and crack.

Lenses should not be kept in a very cold place, or they will become coated with a film of fine dewdrops on being taken into the slightly warmer air. The camera, shutter, lenses, etc., are best kept in an ordinary sitting-room in which is a daily fire.

To the inside of the lid or top flap of your camera case fix a card on which is

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written a full list of all things needed when you are going out photographing, and glance through it *before* starting, to see that you have not forgotten some such essential trifle as camera screw, notebook, lens cap, etc. (The following may be a useful outline guide: Camera and screw, dark slides and plates, lenses, shutter stops, focusing cloth, view-meter, notebook, focusing glass, tripod and triangle. This list may be modified as circumstances dictate.)

Don't forget to have a stock of plates in your dark-room. In all outdoor work it is better to use a waterproof focusing cloth, and so be provided with a guard against injuring camera or slides by a fall of rain or snow. It almost goes without saying that your camera carrying-case is also of some waterproof material.

Never put your camera case or any part of your apparatus on the ground or on snow; for even if you do not walk away and forget it, the chances are that some snow will cling and dampen something or other and cause trouble. Dark slides should be kept either in the coat pockets, if small, or in a bag slung over the shoulder.

Next, a word or two as to clothing and personal comfort. Be provided with a pair of stout-soled, waterproof boots, or, failing that, ordinary thick leather boots which have had a generous coating with melted mutton fat (free from salty matter), or a mixture of equal parts of beeswax and linseed oil, or equal parts of beeswax and tallow melted together. A pair of tight-fitting leggings or leather gaiters are a great comfort when trudging about in ankle-deep snow. A pair of very easy-fitting, thick, warm gloves that one can put on and off in a moment should be included. And in your coat have at least a couple of really big pockets, large enough to hold a couple of half-plate double backs. These pockets are most useful for lenses, shutter, etc., and help to keep one from the temptation of putting things down and mislaying them. Cold weather is apt to make one's fingers numb and clumsy. Therefore, if using a lens cap, pass a stout carpet thread, with knot at end, through edge of cap and tie the other end around the lens. Similarly cut a little groove around the butt end of your pencil, tie with stout thread, and attach to the notebook. With a bit of thin light chain and a small swivel fix the camera screw to tripod top. These are all trifles learnt through experience, after dropping such like things in wet, slushy snow.

Technical Hints. The photography of snow landscape is like that of any other strong-contrast black and white subject. The usual—95 per cent.—error is under-exposure in the first place, followed by over-development—prolonged, no doubt, with the vain hope of getting out details in the shadows. The print is consequently of the "soot and whitewash" variety; for long before the printing light has struggled through the very dense high lights of your snow the dark tree trunks (very nearly clear glass on your negative) have printed to inky blackness; shapeless, black streaks, which form an eye-irritating network of black lines on a white paper ground. If you have not had any previous experience of snow work, take the following little hint and make two or three careful experiments beforehand: Out in your back yard put two or three chairs. Over them spread the cleanest and whitest tablecloth or sheet you can borrow—not flat and taut, but with a few folds here and there. Now take one or two black or dark objects—*e. g.*, a hat, umbrella, small branch of tree, etc.; then make a few trial exposures. Just by way of a very rough guide, suppose you are using an ordinary landscape plate—mid-day—fairly bright light and stop *f*/8. Make two exposures. Give the first plate one-tenth exposure, and the second plate one second. Develop these plates side by side in the same dish. The one-second exposure will doubtless come up first. Aim to slightly under-develop this plate and let the one-tenth second plate go considerably farther. Print the two and compare results. These two plates will probably show you errors in both directions, the shorter exposure and prolonged development yielding violent contrasts of light and shade, with absence of gradation, both in the very dark and very light parts, The longer exposure gives ample gradation in the white part, but with a general lack of vigor. Obviously the happy mean is what is required.

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A word of caution must here be given. Suppose that a third plate exposed, say one-half second, gives you a faithful and satisfactory rendering of brightness and contrast, with gradation at the same time. You must not, therefore, conclude that *f*/8 and one-half second will be right for a snow landscape; for bear in mind that your experiment was a quite near foreground study in your back yard, with little but top skylight, whereas your snow landscape has its foreground further away, and on all sides of you is a large white reflecting sheet of snow, scattering light in all directions. Consequently you will have to cut down your exposure accordingly. But bear in mind also that it is better to err (if you must err) on the side of over- rather than under-exposure. Also, in general, it is better to slightly under- than greatly over-develop, and rely on subsequent intensification for getting needed additional density.

Pictorial considerations should engage our very careful attention. It is not enough to get a good technical result, but we must also aim at making it pleasing to the mind as well. One very common error is that of trying to include far too much subject on the plate. This is a common fault with beginners at all times of the year, but especially so in snow pictures or on a fine clear day. The distance under these conditions looks nearer than usual, and when the middle distance is of somewhat uninteresting character—field or valley, for example—one is still more liable to err in this way.

In general, the most pleasing snow pictures are those wherein a large proportion is foreground. Not nearer than, shall we say ten yards, and not more distant than perhaps two or three hundred yards, the middle and extreme distance being only of a quite secondary character.

AN OUTLINE OF THE CARBON PROCESS.*

BY FRANK HOLLINGWORTH.

THE carbon process is no new process, but before 1864 its application to practical photography was rendered impossible by the difficulty of preventing the image from being washed away during the process of development. However, in that year Swan devised the plan of placing the tissue previous to development upon a temporary support. And since then there has been practically no important improvement, except in the variety of pigments and their supports.

Mr. Swan says, in his specification, that the process known as carbon or pigment printing consists of passing light through a negative and impinging on a surface composed of gelatine or other like substance, colored with carbon or other coloring matter, and made sensitive to light by means of potassium bichromate, ammonium bichromate, or other chemical substances having a photographic property. Those portions of the colored and sensitive gelatinous surface which are protected from the light by the opaque or semi-opaque portions of the negative being afterward washed away by means of warm water, while the parts made insoluble by light remain and form a print.

It is only during the last few years that the carbon process has become more popular among amateurs and the ease with which the process can be manipulated recognized.

We have not got to provide ourselves with numerous solutions, nor have we many of the troubles and worries connected with the other printing processes. We are not confined to any one particular color, for makers will supply twenty or more different shades—far more tints than could be obtained by all other printing processes combined. Another advantage is that of being able to select suitable support for the print, for which almost anything can be used, provided that the surface is first brushed over with a bichromated solution of gelatine and made insoluble by exposure to daylight.

As regards permanency, carbon prints may be said to be absolutely permanent,

* A paper read before the Hull Photographic Society.

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provided that in the final stage they are perfectly freed from chromic salts. In order to do this, it is necessary to use a weak alum bath just before the final washing. Should there be any traces of bichromate left in the print, time and continued exposure to light will have a tendency to produce a sickly green.

The disadvantages of carbon printing fall under two heads. Under the first is the necessity of having reversed negatives where the single transfer method is made use of, and the troublesome operation of double transfer when the ordinary negative is employed. Users of film cameras have great advantages over plate workers in this respect, as the film being so thin, printing may be done from either side without fear of loss of definition.

A reversed negative may be made by either of the following methods: By reversing the plate in the camera, the glass side being nearest the lens. When adopting this way, it is necessary to use the focusing screen the reverse way on, otherwise the resulting image will not be correctly focused, and a fuzzy print will be the result.

A suitable negative may be made by making a transparency of carbon, and then from the positive thus obtained a negative by contact on an ordinary dry plate. Or it may be made by stripping the negative. In this case I should recommend the making of a positive to fall back upon, should the stripping prove a failure. The film is easily stripped from its support by immersing it in a saturated solution of chrome alum for thirty minutes. It is then thoroughly washed and dried. When dry, it is placed in a solution of sodium fluoride 2 drachms, water 10 ounces, for five minutes, and then, without washing, transferred to a bath of strong sulphuric acid 2 drachms, and water ten ounces. When in this solution the film will readily leave its support. It must be carefully floated on to a piece of clean glass and transferred to a dish of fresh water to wash. After it has remained here for a few moments it is refloated on to the glass. All airbells and wrinkles are brushed out by means of a wet camel's-hair brush, and it is placed on one side to dry. If the chrome alum solution is omitted the result will be a considerably enlarged negative, which at the time may not be what is required.

The second disadvantage of the carbon process is that the exposure cannot be judged as in ordinary silver printing, as in the printing the light does not produce a visible image. This, of course, can be got over by the use of an actinometer. A simple and useful article may easily be made at home at practically no cost.

As it is almost impossible to make a satisfactory carbon tissue at home, and as it can be purchased so cheaply from the commercial houses, there is no need to give a collection of formulæ, but readers may be referred to the text-books on the subject.

A brief outline of how carbon tissue is made may be interesting. The coloring matter should be a substance that is not subject to the action of light, otherwise the permanency of the prints would be endangered. The substances used should be well pulverized and ground down as fine as possible, mixed with certain proportions of water, gelatine, soap, and sugar to form emulsion, and the whole placed in a flat-bottomed dish, and allowed to remain at 100° F. for some time. All airbells are removed from the top of the solution by passing a piece of blotting-paper over the surface. Then a piece of ordinary thick smooth paper is passed over the solution—not floated—so as to receive an even coating of pigment. This is placed film side uppermost on a sheet of glass. When the gelatine is set, the sheets are hung up to dry in a clear atmosphere free from all objectionable fumes and dust, in a suitable room, where there is a current of dry air and a temperature of about seventy degrees.

Many like to stock their carbon tissue in rolls, sensitizing it as required. The following is the sensitizing solution:

Potassium Bichromate . .	¾ to 1 ounce.
Ammonia 0.880	5 drops.
Water	20 ounces.

When dissolved and filtered, it is ready for use.

In the sensitizing there is a little latitude allowed, which will permit of varying results in the finished picture. The weaker the bath is in bichromate the greater the contrast in printing; on the other hand, the stronger it is the softer the resulting image, and by the addition of a little gly-

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cerine greater contrast still may be obtained.

The sensitizing material should be poured out in a dish of sufficient size, and each sheet of tissue should be immersed film side upward in the solution, taking care that no airbells form upon the surface. If they do, they may be brushed off with a camel's-hair brush specially kept for the purpose. The tissue must be kept immersed for about three minutes; an ordinary egg-boiler answers the purpose of timing faithfully.

Upon removal from the bath the tissue should be laid film side downward upon a sheet of glass or zinc, and the superfluous liquid driven off by the vigorous use of the squeegee, which should reach across the print so as to get a uniform coating of sensitizing material. The sheets should be placed upon blotting-paper to dry.

A better and more satisfactory way of treating the sensitized tissue is to squeegee it down upon the ferrotype plate. By this means the pigment will be protected from the atmosphere, and in consequence will be in a far better condition than when dried in the first-named method. Another advantage is that this keeps the tissue perfectly flat. Sensitizing may be carried on by gaslight or daylight, but the tissue must be dried in a dark room.

So long as the tissue is moist it is insensitive to light. When it has once been sensitized it becomes a difficult matter to preserve it for any length of time, and unless kept in airtight tubes, it will not keep many days.

By contact with the atmosphere the tissue becomes insoluble. It is, therefore, advisable before commencing to print it to make a test of the tissue for solubility. To do this, all that is necessary is to cut a narrow strip off the margin of the tissue and immerse it in hot water for a few moments. If the tissue is soluble the pigment will readily dissolve; if it is insoluble no change will take place, the tissue feels leathery and will refuse to leave its support. When in this condition it is useless wasting time or material, as it is impossible to obtain any result.

The negative required for carbon work should be plucky and full of detail. A pyro soda developer is strongly recommended, as it is capable of giving a clear and crisp image and is less liable to chemical fog. Before a negative is ready for printing it becomes necessary to supply it with a safe edge, which serves the purpose of preventing the tissue from leaving its support. For this purpose I use lantern binders gummed round the edges of the negative—on the glass side and not on the film side of the plate. By placing the safe edge along the outside the edge of the carbon print appears in a slanting direction instead of a sharply defined edge, which would render it liable to be washed up from its support.

Having got the tissue ready and negative provided with a safe edge, we proceed by taking the actinometer, placing a piece of silver paper within it and another piece behind the negative. Expose both to daylight, and when the print behind the negative appears as a finished print should do, examine the actinometer and note the number. Mark the corner of the negative with the number for future reference. Place a fresh piece of silver paper in the actinometer and a piece of carbon tissue behind the negative. Again expose these to light, and as soon as the same tint in the actinometer is reached the point will be ready for development.

If the print is not going to be developed at once printing should not be carried so far as it otherwise would be, as when once a print has been started the action of the light continues even when the print is placed in absolute darkness.

For development it is necessary to have a few sheets of blotting-paper, a squeegee, a couple of pieces of glass, or, better still for large work, a couple of drawing-boards. Three development dishes and a plentiful supply of hot water complete what is needed—not a large and expensive outfit, it must be allowed.

Before beginning development the dishes should be placed in order. Starting from the right of the bench, I should first place my tissue and supports, then a dish of cold water for soaking the tissue in, after these blotting-boards, then a developing-tray containing hot water, and last of all the alum-bath.

We now take a sheet of support and one of the pieces of printed tissue and immerse both in the cold water. Great care should

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be taken to see that the dishes and water are free from all particles of dust, as any foreign matter in the baths would be liable to get between the pigment and support, and in the squeegeeing operation which follows would become firmly fixed and spoil what otherwise might have been perfect prints. The tissue, as soon as it is placed in the water begins to curl up, and in a few moments, as it becomes moist, will uncurl itself. Of course, it should be kept under water, and when it has quite straightened out the support and tissue are taken, both prepared surfaces are brought together under water, drawn out by one of the corners and placed upon blotting-boards, tissue side uppermost. They are brought into close contact by using the squeegee across the back from left to right, so as to drive out all air-bubbles, etc. Another piece of blotting-paper is placed upon the top of them, then the drawing-board, and pressure is applied for a few moments so as to allow the pigment to get a better grip of its support. In about five minutes the print will be ready for development.

The water should be sufficiently warm to be comfortable for the hands, which may be used as the judge of temperature. The prepared print is placed in the warm water, and as soon as the water has softened the gelatine the pigment will be observed to be oozing out of the edges of the adherent surfaces. As soon as this takes place the tissue is taken hold of by one of its corners and carefully stripped away from the support, leaving upon the latter the layer of pigmented gelatine. The paper of the tissue may be thrown away. But as it bears some of the pigment on its surface, if the worker has any prints of the same color as those which he happens to be developing which require a little spotting this pigment comes in useful if employed immediately after it has been stripped. A little of the pigment applied with a camel's-hair pencil is all that is necessary.

Proceeding with the development, plenty of warm water must be used and the print kept well covered so as to wash away all soluble pigment. I find that an ordinary enema syringe is of great service, as it gives a continuous stream of water and can be applied to some parts more than others if necessary, thus facilitating local development.

Large prints may be pinned to the drawing-board and development carried on in this way. The deep shadows should always be developed up first, leaving the highlights to take care of themselves. Should the print show signs of under-exposure the use of colder water must be resorted to, and will slow down development by making the gelatine less soluble than when hot water is used. On the other hand, over-exposure will require hotter water, and when all pigment possible has been removed a lather of soap or the addition of a little ammonia to the water will help to reduce the print further. Beyond this nothing more can be done.

Having developed the print as far as is required it is placed in the alum-bath for ten minutes, and afterward is thoroughly washed and hung up to dry.

METHODS AND FORMULÆ.

An Alkaline Fixing Bath. The following fixing bath is recommended by B. Kröhnke. Two parts of alum are dissolved in ten parts of hot water, and, on the other hand, one part of caustic soda in ten parts of hot water. The two solutions are mixed together by pouring the alum solution gradually into the soda solution. An almost clear liquid is obtained, which, after cooling down, should be filtered and kept for use in a well-stoppered bottle. Of this alkaline alum solution such a quantity is added to the ordinary hyposulphite of soda solution as will be required to clear and harden the film of the negative. The latter is placed in the bath without being previously rinsed. One or two parts of the alum solution to 100 parts of the hypo solution will generally be sufficient; more may, however, be added without fear of injuring the negative, in the case of a badly-discolored developer having been used, or if a very hard film is required. This alkaline fixing bath has the advantage that it does not attack the negative film, even after it has acted upon it for hours; on the other

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hand, it clears and hardens the film just as thoroughly as the acid fixing bath. The alkaline alum-soda solution keeps indefinitely if it is stored in a well-stoppered bottle, and mixes with the hypo solution without producing muddiness.

The Fixing Bath. Negative fixing baths evaporate rapidly during the heat of summer, to say nothing of the dirt and other accumulations of rubbish that find their way into the solution if left in an open tray. It will be found a good plan to have a loosely fitting cover made to go over the bath when not in actual use. This will be found an effectual remedy for such faults as are due to dirt and evaporation.

Composition. All pictorial composition, says the *Photo-Beacon*, must take some definite form. This leads to the study of a little geometry, and we find that all figures are composed of either straight or curved lines. It takes three straight lines to enclose a space, so that the triangle is the simplest form we can use for the purpose of pictorial composition. In figures contained by four straight lines we have the square and the diamond; figures with more than four lines are too complicated for the eye, and are therefore beyond the scope of the artist. In curved line figures we have the circle and the ellipse—under the head of the ellipse are here classified all curved figures that are not perfect circles. This is not good geometry, but good enough for the purpose. We have then the artistic properties of the following figures to consider: The triangle, the square, the diamond, the circle, and the ellipse. And here must be noted the distinction between a law and a rule. Laws are absolute, rules have exceptions. Laws are outside man, rules are his product. And so while the human eye craves that pictorial composition should be according to some definite geometrical form, it at the same time demands that there must be variety in that form—in other words, it detests too much uniformity.

The Showcase. The photographer's showcase is one of the best advertisements that can be used, if care and judgment are displayed in its arrangement. In no other form do photographs look so well *or so faulty*. The work itself must, of course, be good, well printed, well toned, and well mounted. The prints, if of various colors and sizes, must be arranged to harmonize with each other both as to color and shape of mounts, and the background color must be also chosen with regard to the color of the prints and of the mounts. The same subjects should not remain too long in the case, but should be frequently changed. Do not crowd the case too much, but rather use one or two good prints, and give them plenty of room and margin, so that each stands out boldly, and so forces the attention of the passer-by.

Sensitizing Silk. A process described for this purpose is as follows: The silk to be used is washed in warm water and floated on a solution thus made: Salt, 10 grains; ammonium chloride, 10 grains; water, 1 ounce; ammonia, 15 drops. When this operation is complete—floating should be about two minutes—the fabric is hung up to dry. Subsequently it is sensitized with: Silver nitrate, 150 grains; water, 1 ounce. Floating is continued for two minutes, and the silk is dried. Printing should be deep, and toning is done with an ordinary bath.

To Photograph Polished Silver. Rub light carbonate of magnesia into a thick cream with milk, and paint the whole of the surface with a broad camel's-hair brush. This gives a very fine matt surface, with just a faint glaze in some parts, which shows up well in the print. The magnesia can be readily removed with a soft wet sponge.

Photographing Glass Vessels. For the photographing of engraved glass vessels, the following method is recommended in *Die Photographie*. In order to reduce the vigor of the impression of the back surface, the front side of the glass should be rubbed with powdered talc and lightly dusted with a soft cloth, so as to leave the talc only on the etched or engraved portion. The vessel should then be filled with a very dilute solution of permanganate of potash. After such treatment, a photograph showing a clear impression of the etching or engraving may readily be obtained.

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RETAINING THE CUSTOMER.

BY PAUL CLARE.

FEW things are more persistently dinned into the ear of the photographer than is the necessity for advertising. To make known both name and work, energetically and persistently, is accounted a good and a necessary thing. And so, doubtless, it is. But to attract a new customer might almost be described as a means to an end rather than an end in itself, the real end being the *retaining* of the customer. The photographer who fully understands the business end of his profession knows that the names on his books, the names of people who have sat for him, form one of his most valuable assets.

There seems to be still too much survival of the old idea of value inherent in a negative. The negative is not without value—some negatives are exceedingly valuable, as are some collections of negatives; but speaking of the whole question, too much value is placed on the stock of negatives, and too little value on the legitimate possibilities of a clientele. Like much of our retouching, which is a mere survival of wet-plate necessities, the hoarding of negatives dates from a time now old-fashioned and in many ways effete. *Then* the sitting for a photograph was an event—often of a lifetime; and once a record was obtained the photographer scarcely expected to again see his sitter in a business way. *Now* he takes his sitter, and there is no reason why the sitting, especially if of a lady or of a child, should not be repeated at the end of two years, or even earlier. In the old-time days of one negative per lifetime that negative had a reasonable probability of being again required when the person portrayed was dead. To-day this value is much more problematical.

Negatives are still worth storing, but the original is better worth cultivating rather than waiting for an order from children or heirs.

And in line with this question of repeating sittings at intervals comes that of the immediate value of the negative. Very many photographers welcome a sitter to the studio, take an order for a dozen cabinets, and that is the end of the matter. By a judicious treatment of the sitter the initial order can often be increased, and, although it is not the rule, yet many negatives may be used, in a comparatively short time after they have been made, as a means of again approaching the customer.

The question, therefore, is moved from *getting* the customer to *pleasing* the customer.

First and foremost, in spite of what pessimists and cynics say, good work must be considered. Even among photographers jealousies are not unknown, and the successful man is often criticised in the quality of his work. And the criticism—or perhaps I ought to say condemnation—is usually wrong. The work may be "different," but in its own line it is probably good, however orthodox or however visionary our ideas.

Next to good work, a good business system is necessary. Every name of a customer should be carefully indexed, and the index should be systematically gone through. By letter or by other means these people should be kept in touch with the studio. The plan of glorifying what used to be a mere "reception-room" into one of the fashionable lounges of the town is one of many methods of holding the interest. And such a method has the distinct advantage that it keeps the customers in actual personal touch with the studio, which is better than any mere postal connection. Only a limited few can follow this to its full extent, but all can do their best to make the show-room attractive.

I think the success of the fashionable lounge idea hinges not a little on the point of being "asked to buy." When a person comes on business bent he or she should have prompt attention. But for the rest they should, as much as possible, be allowed to come and go. If a lady has the habit of meeting a friend at the studio she may call twenty times in a year, and can scarcely be expected to sit for her portrait every time—or every tenth time.

Perhaps the man who more than any other needs to keep close track of his customers is the man who is in a very small

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way of business. The man who has larger capital invested and who can employ a staff of assistants often has his business system thoroughly arranged and understood. The smaller man too often makes a spasmodic effort when business is not moving satisfactorily, and at other times lets things take their course. His method is very often too general. It is all right to flood the town with handbills, offering coupons or special advantages; but there should be an additional special effort to those who personally know the studio. Five thousand circulars scattered broadcast will hit perhaps five hundred people, and twenty of these will drift into the studio as a direct result; others may come afterward, unconsciously influenced by the bills. But five hundred rather more careful bills or letters to a selected list, and in some way intimating that their former visit is remembered and appreciated, will draw a much larger proportion of interest and probably an actually larger result. The neglect for properly working this list of preferred names must in the aggregate lose thousands of dollars to the fraternity.

I know many cities where there are many good photographers. I know one city that ere long may write its population with six figures, where there is only one really well-known firm; and a good man tried for a long time to get a part of their trade, and finally retired discomfited. His work was not better than theirs, but it was good, sound work; but they had a hold on their customers. He got the fringe only of their trade, and that by quoting a lower rate. But beyond that he was powerless. For years, as the town has grown, the old-established firm have kept alive and up to date. They have always, first, endeavored to hold their trade, and, second, to win new trade. By giving due attention to the first the second becomes easy; by devoting all the energies to the second the first is let slip. By all means attract all the new trade possible; but once a customer is obtained, make that customer a friend and freeze onto him.

PHOTOGRAPHY AS AN AID TO THE NATURALIST.*

BY DOUGLAS ENGLISH.

THE accuracy and rapidity which form so marked a feature in photographic methods are, no doubt, mainly answerable for the increased employment of the camera by naturalists. The naturalist, however, will not necessarily be content with a single accurate and rapidly executed picture of his subject; he requires rather a series of pictures which are not only accurate, but also characteristic and coherent. Put as briefly as possible, the three qualities essential to good natural history illustrations are accuracy, character, and continuity. I need not dilate upon the obvious advantages of photographic accuracy. Character and continuity, however, I propose to deal with at some length, for, in my judgment, the majority of failures in natural history work are due to the absence of one or both of these in the finished results.

Characterization is realized in a zoological photograph when the subject is represented in a characteristic attitude and amid characteristic surroundings. It is in these two respects that photographs of *stuffed* animals are, as a rule, so unsatisfactory.

To take a photograph of a stuffed animal which shall appear life-like requires more than mere photographic ability. The photographer's share in the matter must, of necessity, be subservient to that of the taxidermist, and, when the photographer enters upon his task with no more knowledge of his subject than is acquired from a cursory inspection of mouldering and badly stuffed museum specimens, he will infallibly bring both himself and his art into contempt. I call your special attention to this point, as there seems to be an unfortunate tendency among publishers to reproduce photographs of stuffed animals as better than nothing, which, in nine cases out of ten, they are not.

A few months back a series of stuffed

* Read before the R. P. S. G. B. November 12th, and reprinted from the Society's Journal.

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fish appeared in one of the weekly periodicals. They were described in the text as "swimming," "feeding," and so on. Quite recently a natural history entirely illustrated by photography has been published, which also derives a fair percentage of its illustrations from the art of the taxidermist. If these were put fairly and squarely before the public as photographs of stuffed animals one could hardly take exception to their appearance, although opinions might differ as to their value. As it is, however, the public, with their touching confidence in photographic accuracy, are led to suppose that bats fly with head and body in a perpendicular line, that vegetation from a photographic stand-point is identical throughout four continents, that the eyes of wild animals in their native haunts protrude from leathery orbits in a glassy stare, or, at any rate, that such non-characteristic phenomena are inseparable from photographic methods of illustration. I submit that this class of photography is greatly to be deplored. Not only is it immeasurably inferior to brush-work, thereby giving the enemy occasion to blaspheme, but it also tends to discredit honest and conscientious work with the camera.

To return to the consideration of character, movements or attitudes characteristic of different animals have become so familiar in many cases as to have passed into proverbs. To "creep like a mouse," to "stare like an owl," to "grin like a dog" are a few of the expressions which immediately occur to one, and the list is of much greater length than might be supposed. A slight consideration will suffice to show that such expressions are originally the result of close observation. Most animals, including man, adopt certain definite postures and expressions more frequently than others. These, from constant repetition, gradually come to be regarded as characteristic. They are more lasting in point of time than other postures and expressions, and create a more lasting impression. When we speak of a portrait being characteristic we mean that the artist has portrayed a particular posture or expression, which is so familiar to us as to have become part and parcel of our mental connotation of the sitter. This familiarity springs from two distinct causes—in the first place, constant repetition; in the second place, appreciable duration. A characteristic expression is necessarily one which the facial muscles are constantly called upon to adopt. The mere fact of constant repetition insures the possibility, and even the likelihood, of duration in point of time. That constant repetition is the secret of all muscle control can be seen in the case of an infant learning to walk. In the case of facial expression the muscles, through long practice, tend to adapt themselves to certain positions, not necessarily of repose, but certainly of equilibrium (we may take a "frown" as an instance of the latter), in which they will remain for an appreciable time, without any conscious effort on the part of the owner. The artist, or photographer, who succeeds in portraying such an expression will have secured a characteristic, though not necessarily a flattering, likeness. To say that a man takes badly is to imply either that his features are exceptionally mobile, or that he is dissatisfied with his own characteristic expression and declines to adopt it before the camera. Fortunately the element of vanity in the character of wild animals is generally small. The fact that their whole aim in life is to live themselves and reproduce their kind insures that their characteristic expressions and attitudes shall be of a less complicated and confusing character than those of the human race. Their frequency of recurrence may be taken as some guide to their importance. In all animals at least two characteristic positions may be looked for—the position of action and the position of repose. Both admit of subdivisions; action, for example, may comprise defence and attack. The attitude of the cat stalking and that of the cat with arched back are equally charac teristic of the cat in action; the "curled" attitude and the "stretched" attitude equally characteristic of repose. Action is, of course, the most difficult to deal with photographically. Not only are the exposures necessarily shorter, but the exact moment at which a picture will most successfully convey the sense of past and future is a most difficult one to determine. If we study the photographs of moving animals, which, in the advertisements, display the ex-

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cellences of various shutters on the market, we will realize the difficulty of securing, even with the perfection of apparatus and technical skill, a result which shall be in any degree convincing. As far as my own experience goes the idea of motion is better conveyed by the picture of an animal in a stationary but suggestive position than by any possible photograph of it in actual movement. If we propose to analyze animal movement, to study, for instance, the various positions of the quill feathers in the flight of a bird, instantaneous exposures are essential, but the resulting pictures will not represent what we see with our eyes. The picture of a "hovering" bird would, if photographically obtainable, convey the notion of flight much better than one of a flying bird. The case of four-legged creatures is on a similar footing. If we examine a kinematograph record of a moving animal we shall find that very few pictures, when isolated from those which immediately precede and follow, suggest at all adequately the idea of movement. If this be the case with a number of pictures which, in point of time, follow hard upon each other, it is obvious that the chance of doing better by a single snapshot is a very remote one. The quicker the exposure the more remote the chance, for when there is a deliberate attempt to suggest movement, a slightly blurred outline is not to be despised. The "distinct" rendering of some quick moving objects—the wings of a dragon-fly in flight, for instance—would, even if it were possible, be ridiculous. The general conclusion would appear to be that, in cases where we would suggest "movement," time exposures have a certain value and instantaneous exposures an uncertain one. The natural perversity of things has arranged that the former shall be the more difficult of execution.

But there is more than mere attitude to be looked for in a characteristic photograph. The surroundings must be carefully considered, and (taking a special meaning of "character") those particular markings and peculiarities which differentiate the subjects from closely allied species.

I think I can best make myself clear by an example, and will take the scarcer variety of English toad, the Natterjack. There are *three particular features* about the Natterjack toad which distinguish it from the commoner variety. It has a yellow stripe down its back, its hind feet are not webbed, and it has a peculiar running method of progression. A really good illustration of this toad would show these three distinctive features. A photograph might easily be produced which would show none of them—a side view, for instance, of the toad sitting still—and such a photograph would probably be the one taken by a photographer who had not troubled to make himself acquainted with his subject. On the other hand, it would be equally easy to produce a photograph which should show the stripes on the toad's back and the absence of webbing on his feet. Without moving the subject, it might be effected by moving the camera slightly to one side, and elevating it so that the lens was pointing downward, a position which, in natural history work, is, as a rule, the right one.

The surroundings should, of course, be congruous with the observed habits of the reptile. The absence of webbing on the feet would suggest a less moist environment than would be desirable with the common toad. There is no excuse for failure in regard to surroundings. In the photographic natural history previously referred to there are two pictures of monkeys, which hail respectively from the Himalayas and the Malay Archipelago. The pictures are separately taken, but, in both cases, the same studio accessory tree does duty. The notorious photograph of a prize hen struggling to preserve her balance on a polished mahogany table is a step further toward absurdity, the height of which seemed to be attained in the photographs of mountebank lions, tigers, and so forth in the circus ring.

I come now to the third essential in natural history work. Suppose the photographer to have been completely successful with a Natterjack. Suppose, for instance, that he has secured a sharp picture showing a Natterjack in a characteristic attitude, amid characteristic surroundings, and with its characteristic external features well displayed, he is really at the commencement of his difficulties and has by no means completed his task. Excellent as the single pictures may be, it should only form one of a series of pictures

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showing the stages of development of the tadpole from the toad-spawn and the Natterjack from the tadpole.

It is in work of this kind that there seems to me to be such a magnificent field open to photographer naturalists. Let the photographer naturalist select a single living form which is common—it does not matter how common—in his particular locality, and determine to satisfactorily record every stage of its development which is photographically possible. Let him then turn his attention to its habits, to its characteristic positions of rest or movement, to its similarity or dissimilarity with closely allied species. Let him supply photographic deficiencies by a written record of coloration, measurements, and so forth, and the result can hardly fail to be valuable. I would especially call attention to the phenomena of metamorphosis and mimicry. There is an inexhaustible supply in these islands of material for the illustration of either.

Hitherto I have treated of a somewhat ideal standard for natural history work; the remainder of my paper will be devoted to a short consideration of the most promising means of approach thereto.

Photography for naturalists falls into two obvious divisions. The first of these, of which the Brothers Kearton are the chief exponents, may be termed "stalking" photography. I notice that the Keartons now emulate the Greeks at Troy, and insidiously approach their quarry inside a stuffed cow! In "stalking" photography the camera is approached as nearly as possible either to the object or to the spot which the object is expected to occupy. It may be necessary in certain cases to disguise the camera, or operator, or both. A variety of methods for so doing is given in the interesting works which the Keartons have already published. The success of stalking photography is obviously largely dependent (1) on the observing power of the photographer; (2) on his patience; and (3) on the time at his disposal. The second division, with which I am mainly concerned, is in some respects the antithesis of the preceding. It may be termed photography of natural objects "by control." Instead of the camera being approached to the object, the object is approached to the camera; the disguised surroundings are transferred from the photographer to the thing photographed. It is not the photography of "Wild Life at Home," but of wild life made to look at home, and, in some instances, to feel at home. Photography by control is obviously more limited in its action than "stalking" photography, but the field is a sufficiently wide one to satisfy any ordinary aspirations. The excitement of the hunt is not lost, for the object to be photographed has to be secured in the first instance. The study of life in the fields is not imperilled, for there will be ample opportunity to study while one is engaged in trapping or pursuing.

The apparatus required for photography by control is of quite a simple character. Plate glass is the only item which can be termed exceptional. Generally, when it is impossible to photograph the victim *in situ*, one of the three following contrivances suffices: A packing case without any cover; a packing case with a glass cover, and a hole through each end for the camera lens; a narrow tank with thin plate-glass sides and solid ends, to hold water if necessary, and to admit of a cover if necessary. There is little doubt that any living creature which is not larger than a rabbit or smaller than a bee can be photographed in one or the other of them, in a characteristic attitude, and amid apparently natural surroundings.

For the photography of any small mammal which is both wild and vicious, under which category we may include the stoat, weasel, and land rat, the following arrangement has been found efficacious: A large packing case is supported at a convenient height from the ground. It is lined, sides, ends, and bottom, with neutral-tinted plaster-of-Paris. The corners are rounded off with plaster-of-Paris, so that the interior looking downward is elliptical. The object of this precaution is to prevent the awkward upright line of junction between sides and ends appearing in the photographs. Through each end of the box an aperture is cut rather more than large enough to admit the lens. Each aperture is covered with a piece of india rubber having a slit in it wide enough to pass the lens through and yet narrow enough to grip it tightly round the mount. We have thus an arrangement by which the

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lens can be pointed toward almost any position of the interior of the box without the risk of tearing it from the camera by a sudden strain. The box is filled to a convenient height with earth, plants, and such like. Two heavy pieces of glass resting on the top of the box form the lid; a third piece of glass of the exact width of the box interior is kept close at hand. The insertion of the latter between the two lid-pieces provides us with a simple method of curtailing the space available for the animal to move in. With the exception of occasional stalking, my personal experience has been confined to the methods just described. It is impossible to do more than generalize over the difficulties that may be encountered. Every variety of photographic difficulty will, I am bold to affirm, present itself sooner or later, but no amount of photographic skill will compensate for ignorance of natural history; and it is the acquirement of the patience and power of observation inseparable from the study of life in the fields that the photographer should primarily address himself.

BLUE PRINTS ON CLOTH.

BY JOHN DOUGANS.

BLUE prints on cloth are as easily and as quickly made as those on paper. The cloth print can, however, be used in a good many more ways than paper prints. For decorative purposes it has few equals. It can be sewed or pasted on almost any article, while for birthday gifts or souvenirs it presents a wide and varied usefulness. Any portrait, group, or landscape negative can be printed on a handkerchief or cushion cover, and pure blue is most attractive on white linen. For bazaars or fairs blue prints on cloth offer a wide field. The materials are cheap and the prints are easily, quickly, and cleanly made. The ready sensitized cloth on the market is both handy and inexpensive; but if one wishes it can be prepared at home, after the lamp is lit, and with this added, that any length or breadth can be made—a yard can be as easily made, if the tray is large enough, as a 4 x 5 piece. Get a half a yard of good bleached linen or cotton; cut into sizes wanted or keep whole. Then dissolve 140 grains of ammonia citrate of iron in 2 ounces of pure water. Bottle and label this solution No. 1. Now dissolve 120 grains red prussiate potash in 2 ounces of pure water. Bottle and label this solution No. 2. To sensitize the cloth take equal quantities of solutions Nos. 1 and 2, put into a clean, shallow pan or tray, immerse the cloth and thoroughly soak it for five minutes, drain off excess (but don't squeeze so as to wrinkle the cloth), hang up to dry, turning so as to insure even drying; pack away for use just as you would any sensitized material.

To print place a piece of the sensitized cloth on a negative in a printing-frame, same as paper, only put in some extra backing; a clean piece of blotting-paper answers well and insures perfect contact. Print in direct sunlight, and print both long and deep. You will find that the cloth will stand a lot more printing than paper; in fact, you cannot hardly overprint, as the washing reduces it down very much. After printing wash in hot water for a few minutes, then in cold water until all the yellow coloring is gone. Afterward, if something very exacting is wanted, pass through a weak solution of muriatic acid and wash thoroughly; this will insure the brightest of blues and the purest of whites.

After the prints are nearly dry put them on a table or ironing-board, spread clean cloth over all, and with a good iron smoothe them out. If one wishes to put a print in the centre of a handkerchief, sensitize the whole, place over a negative in the printing-frame, put stiff cardboard on top, then gather and fold in the remainder, and place the back of the frame over all. To do this properly requires a little practice and care, so as to exclude the light from the places around the edges; but, if well done, it pays. I find it a good plan to cover the entire back with paper or cloth when printing thus. Print deep, and you will not need to open the frame until wanted.

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Try to break up the straight lines a negative will make by fancy oval or cut mat over the negative. This will add to the appearance of the print. Dates, names, or letters can be printed at the same time, if wanted.

GLYCIN AND HYDROQUINONE DEVELOPER.

A RECENT issue of the *Scientific American* has a very favorable notice of "Glycin and Hydroquinone Developer," to which it attributes the merits of cleanliness in a superlative measure, great adaptability to varying degrees of exposure, and considerable lasting power—"in one mixing it is possible to develop two dozen plates in succession, one as clear as the other. The developer is absolutely free from producing chemical fog even during prolonged development." It gives the following formula:

Two solutions are prepared as follows:

No. 1.

Glycin (Hauff) .	180 grains	or 12	grammes.
Hydroquinone .	60 "	4	"
Carbonate of potash	180 "	12	"
Sulphite of soda (crystals) . .	690 "	45	"
Water (hot or very warm) . . .	10½ ozs. or 300 c. c.		

In hot weather it is advisable to preserve it in small bottles and place in lower part of ice box.

No. 2.

Carbonate of potash	1 oz.
Water (cold)	10 ozs.

For use, take one part of solution No. 1 and two parts of No. 2. Bromide of potassium is not necessary, as the negatives will be clear without it.

It is stated that with a slight modification it is possible to produce with this developer very good negatives from plates which have been greatly over-exposed. The modification suggested is:

No. 3.

Glycin . . .	75 grains	or 5	grammes.
Sulphite of soda (crystals) . . .	450 "	30	"
Carbonate of potash .	390 "	26	"
Bromide of potash .	15 "	1	gramme.
Water (warm) .	20 ozs. or 625 c.c.		

This solution may, in doubtful cases of over-exposure, be mixed with the combined solution above mentioned, and it is suggested that a very safe developer may be obtained by adding to what may be called the normal developer an equal quantity of solution No. 3.

For ordinary exposures with the developer, showing a temperature of 70° F., the image usually appears in about 20 seconds after the plate is covered by the developer, and development is generally complete in about four or five minutes. But it is claimed for this developer that if more time is required for full development it can be safely conceded.

PHOTOGRAPHING AGAINST THE SKY.

PHOTOGRAPHERS have long believed that it is very difficult—some have said impossible—to obtain a satisfactory picture of any object which is placed directly in front of the sky or of a bright light. In the case of figures the prevailing complaint is naturally the darkness of the features. But figure-work under such conditions does not much interest us, ; it is usually the work of the snapshot amateur. But the photographing of houses, and of scenes familiar to people, is or should be a source of occasional income to very many country photographers. Leading men may afford to neglect such things (though probably if they had to tackle them they would achieve a fair amount of success), but for every leader there are scores of men who are ready for any chance of increasing their takings.

In outdoor work the bugbear is, of course, halation—or what we call halation. But as it is now proven possible that this can in very large measure be overcome, it behooves us to do what we can toward getting rid of it. In this case, as in

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some others, the amateur—or rather some amateurs—have shown us the way. He, happy man, can quietly experiment, and take us into his confidence just when he achieves a success; and can put his intelligence and his money directly in that one direction, and that one only.

The time is past when the edges of trees must of necessity vignette through halation into a hard white sky. And yet we too often see it. The remedy does not lie in any virtue of special apparatus, or of special method; the whole procedure may be summed up into a use of reasonable care.

Speaking of halation, the ordinary dry plates are very much better to-day than they were a dozen years ago. We have, in addition, non-halation plates, and we can buy backed plates or back our own. The reasonably skilled photographer, even with ordinary plates, should succeed, provided that his plates are not the most rapid, and that they are from some maker whose name is a guarantee of quality.

The first necessity is to see that no more light enters the camera than just enough to cover the plate. The use of a lens shade is common, and is useful. But in special work the shade, as usually constructed, is by no means perfect. Even if a complete cylinder is used, and placed just so that it does not shade the corners of the plate, its circular shape will allow a certain amount of extra light to fall on the inside of the camera. A hood after the principle of a camera bellows, of the same relative dimensions as the plate, could be affixed to the front of the camera and adjusted, so that everything except the plate was cut off from any light. The lens, if it is scratched or not clean, will have a tendency to scatter the light.

These details are necessary, whatever kind of plate be used. The skilful—and careful—photographer will obtain a better result with an unbacked plate than will a novice with a backed one. For much of the trouble of slight halation is due to reflected or stray light falling directly on the surface of the plate.

Another factor which is not always understood is the focusing. Some lenses—even high-priced ones—are incapable of giving a perfect "microscopic" definition over a plate; and many photographers cannot focus to a nicety. A magnifying glass is often a very useful help toward accuracy.

Very often the outdoor photographer is guilty of a wrong diagnosis. He makes efforts to overcome halation when his trouble is really a movement of the object. This is especially noticeable in trees where the fine outer spray blurs very unpleasantly. The common notion of this is that the fineness of the branch is quite overpowered by the strength of light on both sides of it. More often it is due to a slight movement in the branches themselves. Even on still days there is often a tremor at the extreme finger-tips of trees, and a very slight breeze, indeed, will cause them to sway much more than their own diameter. Or a similar fault may be in the camera itself. Some long extension cameras are quite capable of vibration. The body may be firmly perched on three stout legs, but the lens, racked out several inches in front, may move sufficiently to destroy the clearcutness of very fine lines.

Given reasonable precaution, and an absolutely still day, the halation question should not worry anyone. But a certain amount of reflected light falls on *every* plate, and development should be as though fog were feared, and it must not be too much forced, or it will block fine detail, and cause the very trouble which it seeks to avoid.

Beeswax in Solution. At a recent meeting of one of the London photographic societies a bottle of benzol was shown in which thirty grains per ounce of white wax had been dissolved, but which had shortly afterward crystallized out. Thirty grains of pure beeswax are not soluble in an ounce of benzol. Indeed, the wax is not entirely soluble in that menstruum, as a portion remains undissolved. Why we allude to this subject is that for photographic purposes white wax should be avoided, as it is so frequently adulterated with such things as paraffin, spermaceti, etc. The best yellow wax, particularly if it can be procured from a farm where bees are kept, can generally be relied upon for its purity. That is more than can be said for the more expensive white wax.

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FRAMING THE PHOTOGRAPH.

BY J. HORACE MCFARLAND.

THE framing of a photograph is oftentimes a difficult problem. It should always be remembered that the frame is simply a mechanical accessory to the picture, providing a means of holding the objectionable but necessary glass which protects the face of the print from dust and soiling. It may, under intelligent treatment, become also an artistic accessory, enhancing the beauty of the picture; and it may, and very frequently does, detract greatly from the intended effect if improperly considered. In its simplest form it is absolutely unobtrusive, serving only as a protection. In its best form it very acceptably supplements careful work in trimming and mounting, tending toward the homogeneous and satisfactory whole. In its worst form it fairly howls with disorder and inappropriateness, as may be witnessed in its connection with the department-store crayon enlargement, supplied free to the victim who will purchase the frame! In these cases, the frame is the main object of consideration, the thing or print—seldom enough truly a picture!—framed being purely incidental and secondary.

A properly mounted and framed picture of any sort, from the smallest photograph to a great battle-scene in oils, appeals to one as a whole, without the predominance of any of the subsidiary parts. It is just as with dress—the best dressed man is the one who makes no obtrusive impression as to clothes, but meets the eye as a satisfactory figure. We do not specially note or remember as to the shape and color of the garments when they have done their duty of presenting the man in the best light.

I have seen many fine pictures, photographs as well as the productions of the brush, which have powerfully impressed me, but of the framing of which I have only a slight remembrance. These were well framed, and the message of the picture was not disturbed by its accessories. Conversely, I remember going to an exhibition in New York of a number of water-colors of Venetian scenes and life by F. Hopkinson Smith, the first impression of which was most disagreeable, because of the glare of the wild gold mats which intervened between the pictures and their frames. Questioning an authority, I was curtly informed that "water-colors *always* have gold mats and gold frames, of course!" Pushing the inquiry, I got more "sarse," but no logical reason. It was simply another case of following a style once set, most suitable, perhaps, when first worked out in connection with a subject full of strong color in heavy masses, but very inappropriate for the delicate treatment of the versatile "Hop" Smith.

Later on I had a chance to test my own theory as to the mounting and framing of a very perfect reproduction from one of the best of the Venetian pictures, and, as I look at it daily, no doubt appears as to the propriety of omitting both the "gold" mat and the golden frame. The foreground is sunlit, shimmering water, giving lovely olive shadows; the sky is the deep blue of Italy, with fleecy white clouds. The deep olive mat leads off to a dark greenish oak frame, with just a faint trace of gold to relieve and brighten it. There is both harmony and contrast, and the result is an agreeable whole, with nothing to jar on the color nerves.

The framing of photographs rests on just the same principles as the mounting does, and all I have said as to the use of harmony or of contrast in relation to the mount applies perfectly to the framing. If we trim ever so carefully, mount ever so appropriately, and frame improperly, the effect of the whole is poor—the picture does not fully deliver its message.

Very many tradesmen who make frames upon order have no sort of knowledge as to the principles involved, and hit upon good results occasionally by chance only. The most of these think that gilt frames are the sum of elegance—the more gold the more elegance! Of late years there have been introduced a very great variety of frame mouldings, including many in black and in gray, which make possible superior effects. If one will keep in mind the necessity for harmony, selection of a proper frame material will not be difficult.

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For black and white photographs the black and gray oak mouldings are particularly good. If the combination seems sombre, or dull, a narrow silver lining next the print will do wonders. Many good mouldings have the necessary trace of silver incorporated in them. For some prints nothing is better than a single dull silver strip, barely a half-inch wide, this doing best when set against a rather wide expanse of dark-toned mount.

As previously noted, the fashion of using a proportionately very wide black oak frame close up against a platinum print is going out. Framing "close up" is admirable sometimes, and abominable when done merely as a fashion without reason. I think every fashion—perhaps even the long skirts used by ladies to sweep dirty streets nowadays!—has had its rise in some rational use, and its abuse is slavish following, without reason. Be that as it may, we can use the close framing method or not, as seems to best fit the subject in hand, not because this or that prominent worker has adopted it. Large heads, or half-length portraits in the Rembrandt lighting, seem to demand this close framing, and the effect is better when the moulding is deep—curving in toward the picture so as to stimulate distance or depth. It is almost essential, for successful close framing, that there be no great difference in color and tone between frame and picture. Strong color contrasts will be ruinous.

It is seldom that a picture abounding in light looks well when framed "close up," the contrast is too violent and obtrusive.

For the browns of silver printing-out papers, of toned platinum and of the gum-bichromate fad of the day, there are appropriate mouldings accessible either in tones of oak or in the natural walnut. With some care, black frames may be used also, and occasionally a dark green moulding will contrast very acceptably. A brown carbon is matched by a darker brown-stained oak, and if the picture be of any size, a trifle of gold will brighten it, just as silver does the black frames for platinum and bromide. A frame entirely of gold moulding is seldom truly satisfying for any monochrome, the yellow hue of the precious metal seeming to find its best framing use in connection with broad masses of color, either in oil, water, or other polychromatic medium. The exquisite $2.98 frame of dubious gilt which surrounds and fortunately extinguishes (mostly) the high-class cabinet enlargement, "crayoned by hand," as provided by the big store as a premium for the purchase of a dollar's worth of soap, sugar, or muslin, is a thing by itself, amenable to no art principles. It serves a most useful purpose as a dreadful example, however.

THE BUSINESS OUTLOOK FOR 1902.

BY JOHN A. TENNANT.

THE editor has asked me for a paper for the January number, and he writes: "Let us have something inspiring, to set the new wheels working everywhere." So let it be. I know of nothing more inspiring for the photographer, as a business man, than a brief statement of the business outlook for 1902—provided that the outlook has a reasonable foundation.

In what follows there is nothing of my own. The statements are made in every case by men properly fitted to judge in the circumstances and to give a competent opinion. I have gathered them piecemeal from the "Financial Review" of the *New York Times* issued January 5th. This special supplement of the *Times*, by the way, is honestly worth ten dollars to every thinking American.

Professional photography, as a business, depends for its prosperity upon the prosperity of the people in general. The portrait is a luxury. In prosperous times people indulge in luxuries, and photography secures a generous share of the amount spent for luxuries. When general prosperity contracts, the amount of money spent for luxuries contracts also, and the photographer is one of the first to feel the result of this contraction. Hence the out-

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look for business in general, all over the country, is a matter of prime importance to every professional photographer. Especially is it wise for the photographer to inform himself as to the outlook over those fields of activity upon which general prosperity chiefly depends—agriculture, manufacturing, money.

It is from this point of view that what follows possesses interest and significance for the professional photographer. Let each man read for himself, judge for himself, how these general statements apply to his particular circumstances, and lay his plans for 1902 accordingly.

The Opening Year of the New Century. "1901 was the opening year of a new business era, which may be, without exaggeration, termed revolutionary. Older nations, scarcely recovered from the shock of the revelation of the United States as a military and naval power of the first rank, were further amazed by its assumption of leadership in commerce and finance. Forces, however great, can long work silently and unnoted, but results accomplished must become visible, as if clothed in dramatic symbolism—and thus the recent marvellous achievements of the American nation assume tangible, seeable shape in enormous exports, vast outputs of foundries, factories, and mills, unexampled railroad traffic, and the creation of wealth on a scale and with a speed hitherto unknown. Such teeming activity can no longer find scope merely within our own borders; and, so, throughout the world has appeared the advance guard of the American invasion of brains and energy. Notes of alarm are heard from rival lands—the manufacturers of England and Germany profess dismay at American competition, and invoke government aid against the terrible Yankee peril. Salvation for them does not lie that way—they must be forced to the wall unless they improve their methods and approach the American standard. In 1901 some portion of this country's prosperity was not due to its own efforts and its own natural superiority, but to the unfortunate condition of its chief competitors. England has been and still is handicapped by the frightful consequences of a wretched war; Germany has been, and is, in the throes of speculative industrial collapse. But the advantage thus gained by America is not likely to be lost when conditions change—for back of the adventitious circumstance is the superior skill of American workmen and the intelligent cohesion of American capital—producing the best and cheapest. . . . .

"Agriculturally, 1901 was two-faced—the corn crop short, the wheat yield bountiful. That the corn shortage led to no distress even in the States afflicted, and that it resulted in no diminution of railroad earnings, is the most remarkable evidence possible of the extent and solid character of prevailing prosperity. Only a phenomenally rich community could suffer such a loss without disturbance. But prices for corn harvested, and the advances in returns for other crops, make amply plain how difficult it is to put this country at disadvantage—give point to a recent incident in Topeka, where an Eastern banker began to sympathize over the corn crop failure with a granger, the latter responding: 'Yes, it's too bad; we haven't a thing left in Kansas this year but wheat and money.' . . . .

"It is a safe assertion that at the close of 1901 the American people form the richest, the most prosperous, the most productive, the most contented community that the modern world has seen.

"What is the outlook for 1902?

"No menace is discoverable. Production is still behind consumption, except in the copper trade, and in this the consumption shrinkage is foreign, not domestic. For example, the United States Steel Corporation, it is officially stated, has orders in hand to the limit of its capacity for over a year to come. Textile manufacturers report improved demand for their products. Coal trade prospects were never so brisk. Labor is easily sought at good wages. Farmers are prosperous. Merchants enjoy satisfactory business. Credits are normal. Barring unfavorable disaster, prosperity should yet further expand. . . . .

"Abroad the outlook is not so rosy. England staggers under increasing war disbursements, Germany is suffering from domestic trade trouble, Russia has a famine district to look after, France only is fairly prosperous. But, fortuitously enough, the very conditions afflicting Europe favor the

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United States. We are supplying foreign crop deficiencies, and our manufacturers compete to additional advantage with heavily taxed competitors. In international adjustment of things, Europe's loss is our gain.

"And as to money market conditions: Is danger lurking there? Says George F. Baker, President of the Clearing House: 'There is no trouble present, and there is none in prospect.'

"At the start of 1902 it is really a tiresome task—the hunt after an excuse to be blue. H. ALLAWAY."

People Are Saving Money. When the people are able to put money away in savings banks the time is opportune to ask a better price for good work and to introduce new specialties and styles. The Comptroller of the Currency, Mr. W. B. Ridgely, says:

"In 1901 there were 1007 savings banks in operation in the United States, with 6,358,723 depositors and $2,597,094,580 deposits. The average amount due each depositor was $408.30, and the average deposit per capita of population of the United States was $33.45.

"In addition to the savings bank deposits the deposits in building and loan associations must also be taken into consideration, the assets in which in July, 1901, amounted to $575,518,212.

"From a table prepared by M. Fatio, published in the *Bulletin de Statistique*, in May, 1901, showing the number of depositors, amount of deposits, average deposit account, and average deposit per inhabitant in the savings banks of the world, the United States stands fifth on the list in number of depositors, first in amount of deposits, first in average deposit account, and seventh in average deposit per inhabitant.

"When the economic condition of the average savings bank depositor in the United States is compared with that of the same class in other countries of the world, it will be seen from these figures that the industry, thrift, and frugality of the wage-earners of this country compare favorably with those of any other nation, and that, too, without deprivation of the home comforts and social enjoyments which are unknown to many of the depositors in the savings banks of other countries."

Is Money Plentiful? About this important item Mr. Ridgeley says:

"On page 334 of the report of the Comptroller of the Currency for 1901 will be found a table showing the coin and paper circulation of the United States from 1860 to 1901, and the amount of circulation per capita during each year of the period indicated.

"In 1860 the per capita circulation was only $13.85, and, with the exception of the year 1862, when the per capita fell to $10.23, it has steadily increased since that time, and in 1891 reached $27.98, the highest point attained in forty-one years.

"In 1891 the total money of the United States was $2,483,147,292, of which $1,734,861,774 consisted of coin, representative certificates and bullion in the Treasury, and $748,285,518 of United States and bank notes. Deducting from the total money of the country $307,760,015 of assets in the Treasury in the form of coin, bullion, and paper money, the total circulation of the United States in 1901 is shown to have been $2,175,387,277, or a per capita of $27.98.

"When the fact is taken into consideration that 90 per cent. of the commercial transactions of the country are represented by checks and drafts and other instruments of credit, and but 10 per cent. by actual money, the money of the country would seem to be ample for all purposes if a scheme can be devised for keeping it in circulation by preventing the locking up of so large a part of it in the Treasury."

The Production of Gold. In a review of "*The World's Money*," Mr. M. L. Muhleman, ex-Deputy Assistant Treasurer of the United States, has this to say concerning the production of gold:

"It is of special interest to us that the United States now leads the world as a producer of gold; and equally satisfactory to know that we have retained that portion of our product which has not entered into the arts and manufactures, the demands of which branches of our industries have been considerably increased by the prosperous times. This country has hence bene-

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fited more largely than any other from the continued large output of precious metals; and this has made it possible to dispense with any and all drafts of gold from other nations which we could have demanded on account of our great favorable trade balances. Indeed, we were placed in the position of a leading nation; we were able to assist other countries materially during the year, contributing to the conservation of stability where it was possible."

The Opinion of a New York Banker. Mr. A. B. Hepburn, Vice-president of the Chase National Bank, writes of National Bank Development, ending his review with the following pertinent paragraph:

"The volume of business passing through the banks of this city was never greater; the evidence that all branches of business are being conducted at a reasonable profit was never stronger; the general outlook was never brighter. Of course, no one can foretell the action of Dame Nature. Drought or floods or crop failure may change conditions and bring commercial disaster. Wild speculation which should carry prices way beyond reason might in its natural reaction overcome natural conditions and make the year 1902 one of doubt or distress; but if the action of man with the bounty of Nature shall yield to us average results, with the great impetus now existing in all branches of industry, 1902 must prove a year of great prosperity."

Agriculture. Dealing with the country's crops and prospects, Mr. James Wilson, Secretary of Agriculture of the United States, says:

"Agriculture contributed conspicuously to the remarkable expansion of American commerce witnessed during the past year. According to statistics prepared by the Section of Foreign Markets, the highest record previously attained in the exportation of agricultural products from the United States, that of 1898, was surpassed by more than $90,000,000 in the fiscal year ended June 30, 1901, when a value of over $950,000,000 was reached. Fully 65 per cent. of the domestic merchandise sent abroad during the year originated on the farm. The United Kingdom is our best customer for agricultural products, taking over 50 per cent. of our exports. After the United Kingdom, the most important foreign markets for our surplus farm products are afforded by Germany, France, the Netherlands, and Belgium.

"There is not a doubt but that our influence will be to increase the productive power of all the islands which have come under our sovereignty. We will increase it in all directions—in field, forest, and mines. We are building up staffs for agricultural investigation in Hawaii and Porto Rico now, and we expect to soon have one established in the Philippines."

How the Jobbers Look at 1902. Mr. D. LeRoy Dresser, President of the Merchants' Association of New York, says:

"The jobbing houses are looking forward to a good season. I see no reason why they should be disappointed. The purchasing power of the country has been very largely increased during the last few years. Generally speaking, crops have been good throughout the United States since 1896–97, and prices of products of the soil have been maintained at a higher range than previous to that time, so that in consequence the farmers have received a good return for the results of their labor. They have paid off their indebtedness to the local tradesmen. In many instances they have been able to decrease the amount of the mortgages held on their farms, or to pay them off altogether. The ultimate result of this has been that the local merchants in the agricultural sections of the country have cleaned up a lot of old debts which they had been carrying, and have been in a position where they could buy more freely of the jobbers. The jobbers in turn have been obliged to keep their lines of goods full to meet the increased demands. This in turn has favorably affected the factories and mills, increased the purchase of raw material, and has been one of the most potent factors in the country in adding to the prosperity which the Nation has enjoyed for several years."

Railroads. The editor of the *Railroad Gazette* writes:

"Probably the railroads of the United States, as a whole, were never in a sounder condition than now. Generally speaking,

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capital has not been inflated in the recent operations; actual values have been created and increased; a way to co-operate has been opened. All this has been accompanied by some disagreeable features, and in a few instances by inflation and other dangerous features, but there is a big balance on the right side of the books."

Dry Goods. Reviewing the year's showing in textile industries, the editor of the *Dry Goods Economist* writes:

"The dry goods trade is in a far better position than a year ago. The general prosperity of the country has caused a liberal demand. There is, moreover, a marked change in the ideas of the American consumer. The craze for cheapness has disappeared. Better and better qualities are desired, and the old wasteful method of buying low qualities on the principle that what is cheap can be more readily replaced when the short term of service is over, has given way to a general tendency toward the finer grades. To-day it is not a question of 'How cheap can this be bought?' but of 'How long will it last?'"

The *Times*' review, from which these extracts are taken, goes into every department of commerce and industry, and everywhere the same encouraging report is given. The trade prospects from various important cities are given in detail, from which we learn that in every city of size in the United States trade conditions are at their brightest. It is, of course, not practicable to include one-tenth of the interesting facts here, but I have given enough to put new courage and new enterprise into the heart of every photographer intent on reaching success in his business.

The presentment may fitly close with the opening and closing paragraphs of the *Times*' editorial on the general situation, as follows:

"We are paying off our indebtedness to other nations at the rate of $350,000,000 a year. We still owe some $1,700,000,000. Five years more of our present prosperity and productiveness would square the account and prepare the way for us to become what we have not yet become—a creditor nation, a lending nation, not a borrowing one. . . . At this rate, if our prosperity sustains no check, the entire net indebtedness of $1,700,000,000 will be extinguished in less than five years. We cannot reasonably expect that the present 'good times' will continue five years, but it is certain that we are on the way to becoming a creditor nation."

GLASS POSITIVES.

BY ROBERT MELVILLE.

In a recent article I spoke of the "working up" of old and faded photographs, albumen prints, tintypes, and the like for copying. The handling of "positives" on glass was not touched on, and I propose now to very briefly describe how they should be treated. Once having the "know-how," there is little fear of trouble in this class of work; but if a photographer handles a glass positive without understanding it, he may, under certain conditions, find that, in spite of his care, the original is ruined before he knows it. And it may be taken for granted that any old photograph which has to be copied has some special value to its owner.

Speaking of glass positives, we usually mean glass negatives, for the old glass portrait, of which the ambrotype is the best known example, was really a negative of ghostly thinness, coated with black varnish or backed with black cloth, which, showing most clearly through the clear-glass parts, gave the effect of a positive.

The reason why a young photographer may find trouble in endeavoring to reproduce an ambrotype is that, being used to the manipulations of tough gelatine films, he does not appreciate the tender nature of collodion. Sometimes through decomposition of the film—often owing to that old curse, insufficient washing—the collodion may be so delicate that to merely dust it will ruin it. An almost absolute rule, therefore, is never to tamper with the film itself.

If the black varnish is on the glass side of the positive it may be removed by care-

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ful rubbing with a rag dipped in benzole. If, however, the varnish has become too dry and hard—it probably will have done if the print has been very much exposed to the light—it may be scraped off with a knife. It will be very pliable, and small flakes will keep flying off; care must be taken that none of these get on the front. Sometimes the varnish is over the collodion film itself, and here the case is rather more difficult. The varnish is often more or less cracked, and though it is possible to coax the film to its original position and then revarnish it, the procedure is a delicate one. The best plan with such a plate is to put a piece of black velvet in contact behind it and copy it as it is.

When the plate admits, and the varnish has been cleaned from its back, nothing remains but to treat it at its merits—as a very thin negative—and make a positive by copying in the camera. The film will be too delicate for contact work. From this positive a negative may be made, and printed from. For these a slow plate, or, better still, a "photomechanical" plate, should be used, and development should tend to contrast in such case.

Where an enlargement is required it can often be made direct from the ambrotype onto bromide paper, the print being afterward worked upon. But even in this case it will usually be well, even if only from the point of probable business, to obtain a glass negative as well.

From all this it will be seen that there is no inherent difficulty in copying a glass positive, but that care is essential. The whole difficulty is often overcome if the photographer only realizes the delicate nature of the film, and refrains from any experimenting with its surface.

EDITOR'S TABLE.

A NOTE received from the Hansbury Studio, 914 Chestnut St., Philadelphia, tells us that Mr. WM. CURTIS TAYLOR, surviving partner of the art firm of WENDEROTH, TAYLOR & BROWN, has again associated himself with this old established studio. Mr. TAYLOR'S reputation stands high in the profession, and our best wishes for his success go with him in his new sphere of photographic activity.

Photograms of the Year 1901. A Literary and Pictorial Annual of the Year's Best Photographs. Pp. 192; about 200 illustrations. Price, $1. American agents, TENNANT & WARD, New York. London: DAWBARN & WARD, Ltd.

Photograms of the Year, now that we cannot have our own *Mosaics*, easily takes the lead among the year-books in interest, pictorial attractiveness, and general usefulness. It is a wonderful book for the photographer intent on picture-making, offering, as it does, profitable suggestions on every page in picture or text. The famous exhibitions of the year are well reviewed and profusely illustrated. In fact, next to a personal visit, a careful survey of *Photograms of the Year* is altogether satisfactory, reproducing the principal pictures, and the walls showing how the pictures were arranged.

We would like every reader of the MAGAZINE to avail himself of the treasures of information and art stored in this volume, and have, therefore, arranged to supply our subscribers with the book, post free, on receipt of $1. The supply, however, is limited.

A NOTABLE photographic competition is announced by the EASTMAN KODAK CO., under the style of the Kodak Progress Competition. Four thousand dollars are offered in prizes, and the conditions of the competition are few and simple. All competing pictures must be made with a kodak or a Brownie camera, on Eastman film, and printed on a paper made or sold by the EASTMAN CO.

There are eight classes, each class offering twenty-five awards, ranging from $150 in gold to a $5 No. 2 Flexo Kodak. Altogether $2000 will be awarded in cash and the balance in kodaks. The competition closes November 15, 1902. A leaflet giving full information can be had from the EASTMAN KODAK CO., Rochester, N. Y., and we commend the competition to our readers as well worth their best efforts.

THE jolliest New Year's greeting of them all came this year from Mr. J. C. STRAUSS, of St. Louis. It is a dainty Lytrit portrait of a fat and happy youngster coming away from the dinner-table, looking well filled and altogether contented. An appropriate motto, signed by Mr. STRAUSS, completes the happy idea. Most sincerely do we reciprocate the joyful sentiments of the souvenir.

SPEAKING of Lytrit portraits, we notice in the current number of *Photography* (London) a remarkably offensive opinion, of which we trust the usually well-informed editor of that journal will be properly ashamed in due time. The paragraph quotes WIL-

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LIAM MARION REEDY'S glowing tribute to Lytrit portraits, given in our December issue, and, after a description of the method, says: "The result is a hybrid, which, however offensive to persons of cultivated taste, will, we doubt not, prove immensely popular among the class to which most professional photographers have to look for a living." When the editor of *Photography* knows more about Lytrit portraits, their maker, and the good people of St. Louis, including the gifted word painter, WILLIAM MARION REEDY, we feel sure he will be quick to acknowledge the crudity of his criticism. The Lytrit portraits sent out by the Strauss Studio embody the highest achievement of a master in the profession, whose portraiture is certainly not surpassed by the work of any European photographer within our acquaintance. As for "the class to which most professional photographers have to look for a living," in America at least this class possesses a fairly critical taste, of which the superiority of American photographic portraiture is the best proof.

AMONG the awards of the Pan-American Exposition recently announced we note with pleasure that the WALPOLE CHEMICAL CO., Walpole, Mass., received the *first prize* for the "purity, uniformity, and general excellence" of Walpole Hypo. This official indorsement of Walpole Hypo, as possessing the qualities most desirable in hypo soda as used in photography, confirms our own opinion of this specialty, and will be gratifying to its manufacturers.

No brand of hypo at present obtainable receives such care and skill in its preparation as does Walpole Hypo, and it deserves the highest praise we can give it.

SOME days ago Mr. JOHN CARBUTT, Wayne Junction, Philadelphia, showed us two photographs of the spectrum made on his new *Polychromatic Plate*. These prints abundantly sustain Mr. CARBUTT'S claim that the Polychromatic plate is remarkably sensitive to the whole range of spectrum colors, and especially to the red bands. For the best results in portraiture, delicate draperies with colors, photographing paintings and similar purposes the wide-awake photographer should not overlook the *Polychromatic Plate*. A comparison of negatives of the same subject made on *Polychromatic* and ordinary plates will surprise those who have hitherto been content with the ordinary plate.

We advise an early test of the *Polychromatic Plate* in the studio, and that negatives be developed with the "safe light" supplied by Mr. CARBUTT, in order to secure the most favorable results.

The American Annual of Photography for 1901, edited by Mr. W. E. WOODBURY and published by the SCOVILL & ADAMS CO., 5 West 19th St., New York, is now ready for delivery. Although very similar in make-up and general contents to the Scovill *Annuals* of former years, the new volume is, we believe, an advance especially in the pictorial quality of its illustrations and the usefulness of its articles. Mr. WOODBURY has succeeded in getting together a series of very practical and interesting papers, written for the most part by men skilled in the things written about. It is a helpful book and should find a welcome on the bookshelf of all photographers. Price, 75 cents, paper; postage, 15 cents additional.

DR. GEORGE G. ROCKWOOD sends to our table an admirable portrait of the late President McKinley. According to the legend beneath the print this portrait was declared by Mr. and Mrs. McKinley to be the most satisfactory of all the portraits made of the late President.

WE notice in the newspapers announcement of the death of Miss ANNA CATHERINE DRAPER, at Hastings-on-Hudson, New York, December 10th. The report states that Miss DRAPER was the first woman to be photographed, alluding, of course, to the daguerreotype portrait made by the late Prof. J. W. DRAPER, of New York, in 1840. The sister of Prof. DRAPER who sat for that portrait, however, was generally known as Miss DOROTHY DRAPER, and figured conspicuously in the social life of the metropolis of her day.

THE Rotograph competition referred to in our pages last September closed on November 15th, and the judges appointed met on December 5th to award the prizes. A total of 1000 prints were submitted and received careful scrutiny from the four judges. The grand prize ($200) was awarded to OSCAR MAURER, of San Francisco. The first prize in the contact class fell to JOHN DOLMAN, Philadelphia. Mr. MAURER secured the first prize in the enlargement class, and the highest award in the postal-card class was given to Mr. L. W. BROWNELL, New York. Altogether over $600 in cash and "Rotograph" supplies were divided among the prize winners. A full list of these is given in the *Bromide Monthly*, which can be obtained, on request, from the ROTOGRAPH CO., 101 Fifth Ave., New York.

A PROMINENT Northwestern photographer, in renewing his subscription to this MAGAZINE, sends the encouraging word: "I have just passed one of the most pleasant Christmas seasons I have experienced. None of my patrons was disappointed, and everyone went away pleased. Best of all, everybody paid promptly for what they ordered, which enables me to pay my bills and start the new year happily."

This story, in one form or another, has come to us from a hundred studios in various parts of the country. We rejoice to note the prosperity of the craft, and hope it will long continue.

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"GOOGA"

By W. G. C. Kimball, Concord, N. H.

Original, sepia platinum; The Philadelphia Salon, 1901

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WILSON'S PHOTOGRAPHIC MAGAZINE.

EDITED BY EDWARD L. WILSON.

VOL. XXXIX. FEBRUARY, 1902. No. 542.

THE PHOTOGRAPHERS' ASSOCIATION OF AMERICA.

REPORT OF THE EXECUTIVE MEETING.

THE Executive Committee of the Photographers' Association of America met in Buffalo, N. Y., January 14, 1902, with all members present.

The first business considered was the reports of Secretary Nussbaumer and Treasurer Barrows, as follows:

SECRETARY'S REPORT.

Received for space and advertising	$2274 50
Paid to Treasurer	2274 50
Bills receivable	330 00

TREASURER'S REPORT.

Cash on hand, January 1, 1901	$3106 78
Received for membership and dues	2170 00
Received from Secretary	2274 50
Received from S. L. Stein: balance on entertainment fund, 1900	147 10
Sale of ladies' buttons	48 00
Total	$7746 38
Disbursed by voucher	3366 84
Leaving balance on hand January 1, 1902	$4379 54

The President appointed H. S. Klein and C. R. Reeves as Auditing Committee, who examined the accounts and found them correct.

August 5th, 6th, 7th, and 8th were selected as dates for the Convention.

It was decided that no prizes should be offered, but that all exhibits be invited as complimentary, it being considered that all progressive photographers have a strong interest in the Association and will help to make the display of pictures unsurpassed.

It was decided that Wednesday, August 6th, day and evening, should be given entirely to the manufacturers and dealers, to be used as they so desire, and that no business session whatever be held on that day.

The following Committees were appointed:

Committee on Transportation: J. B. Nussbaumer and C. R. Reeves.

Committee on Badges and Buttons: President Edmondson, J. G. Nussbaumer, and H. S. Klein.

Committee on Hotels and Accommodations: President Edmondson, J. G. Nussbaumer, and Secretary Reeves.

Committee on Decorations: J. G. Nussbaumer, H. S. Klein, and F. R. Barrows.

The Secretary was instructed to publish a Souvenir, and to insert the names and addresses of all the members and associate members of the Association, and to mail each member of the Association a copy of the Souvenir thirty days before the Convention.

The Committee on Hotels reported that arrangements had been made with various hotels for accommodating members of the Association at reasonable rates.

The Committee on Decorations submitted an estimate for the entire decoration of the Convention Hall, which was accepted by the Board, and the contract let for the same.

The Executive Committee find that the City Convention Hall of Buffalo, granted by the city of Buffalo, is particularly adapted to the uses of our Association, and will fill every requirement.

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RULES GOVERNING THE EXHIBITION.

1. Exhibits may be framed or unframed, at the discretion of the exhibitor.

2. The Association will not be responsible for any loss or damage to pictures in its charge, but special precaution will be taken by the Executive Committee to ensure the safe return of all exhibits entrusted to its care.

3. Applications for space in the Art Department shall be made to J. G. Nussbaumer, Buffalo, New York.

4. All pictures submitted for exhibition must be addressed to J. G. Nussbaumer, Buffalo, New York, First Vice-President of Photographers' Association of America, City Convention Hall, forwarded at owner's risk and delivered not later than August 1st, charges prepaid.

5. Exhibits for the Manufacturers' and Dealers' Departments to be shipped to C. R. Reeves, Buffalo, New York, Secretary of Photographers' Association of America, City Convention Hall, charges prepaid and placed in position by August 5th.

6. Have your box covers screwed instead of nailed. Your home address must be marked on the under side of cover for return of pictures. Association will not be responsible for packages not marked.

7. All boxes and packages will be accepted at any time previous to August 1st, so that photographers need not feel any uncertainty about the safety of their goods. No exhibits will be allowed to be removed from the hall until the close of the Convention.

8. No manufacturer or dealer, or their representative, shall do business on the floor of the hall unless he or they rent floor space or desk room, and the manufacturer or dealer shall pay $2 for each employé or representative attending the Convention.

9. Employés, to gain admission to the Convention at the employé rate ($2), must furnish certificate from employer or be indorsed by two active members of the Association.

10. Dues shall be paid to F. R. Barrows, 1873 Dorchester avenue, Boston, Mass. Membership, $3. Annual dues, $2.

C. R. REEVES,
Secretary,
ANDERSON, Ind.

Dated: BUFFALO, JANUARY 16, 1902.

The publication of the foregoing report shows that the new officers of the National Association have begun their work with commendable promptness.

The report makes a most favorable showing for the Association, especially with regard to its finances. Never before, we believe, has the Association had so large a balance of ready cash in its treasury. Unburdened by any expenditure for medals or trophies, the officers of the Association have abundant opportunity to prepare a Convention which will break all records as far as practical usefulness is concerned.

We have been favored during the past week with a personal call from Messrs. Edmondson, Klein, and Reeves, President, Vice-President, and Secretary respectively of the Association. In our discussion of Convention features with these gentlemen we were much impressed by their alertness of view and earnestness in the work they have undertaken.

The forthcoming Convention at Buffalo should be a notable one. We urge our readers, one and all, to rally around the officers of the Association by preparing an exhibit of their very best efforts, and to make preparations beforehand to attend the Convention in person.

PRICE LISTS AND SHOWCASES.

BY PAUL CLARE.

THESE two important details of photographic business are not usually classed together, but I bracket them here because in inspecting a number of showcases I notice a growing habit of pinning a copy of the firm's price lists among the specimens of work done. This has always been a rule in second-rate businesses, but now I notice it creeping into the better grade ones. And so when I set out to inspect showcases I have at the same time an opportunity of learning prices.

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One suggestion that comes from some of these lists is that photographers sometimes make their terms much too involved. I have seen instances where there is too little in the list, but such are rare. The commoner fault is to make the list too complex. To quote an extreme example: I recently saw a list which, while giving various sizes from midgets to panels, quoted different rates for head only, vignettes, half length, three-quarters or full length, for two or for three persons, for groups, and finally for different printing processes and for various mountings. This last item, coming on top of all the others, seemed to me as a sort of refinement of intricacy. The vignette, fortunately, is under a cloud; I say fortunately not because it is necessarily an undesirable thing in all events, but because it has in the past been so mercilessly overridden. It is easy for one who does not earn his bread by photography to criticise, and I make the suggestion with some diffidence, but it seems as if quoting a special rate for vignettes is scarcely necessary. The extra expense of a vignetted print is nil, and the trouble is very little. I am speaking here of the "usual thing" of commerce. About the half lengths, etc., I feel a little more confidence, for my suggestion regarding these at any rate cannot be considered as savoring of price cutting. In quoting a lower rate for these the idea is, I believe, that there is a saving on retouching. If so it is only a few cents, and surely any reduction of price means a *bona fide* loss to the photographer. If the idea is that a "head and shoulders" is more difficult to pose, light, etc., then the idea is, I think, a mistaken one. If a photographer honestly tackles the difficulties of posing a full length he earns his money at least as hardly as when dealing with a head only. Against these reduced prices comes the extra charge for two or more. Here again I speak with some diffidence; but it seems that it should be possible to quote one flat rate for all styles. Or if not at any rate the lower price could be abolished and a line added, "Vignettes or groups charged extra." Another thought suggested by the price list is that in very many cases it is far from an ideal production. It may be the work of a cheap printer, and there is as much difference between printers as amongst photographers. Or it may be aggressively artistic, which usually means ornate; and nothing must be less convincing to a really refined sitter than an over elaborate price list from an "artist." The tendency seems to be to overlook the all-important point of how the list will strike the prospective customer. There is too much attention given to the greatest quantity for the money and too little given to the best quality. Two hundred lists noticed, and by the right people, are more effective than two thousand cheap circulars scattered promiscuously.

It has been said that good appearances and good business rank higher in results than does good work. There is a good deal of truth in this, if only it be stated somewhat differently. Good work, to succeed, must be backed by business method, and some very successful studios turn out only a moderate grade of work, but have excellent management. However this may be, the showcase is often the first introduction between the photographer and his customer, and it is therefore very essential that it should have a good appearance. Most photographers seem to keep the case itself in good condition, and where cases are in much need of repair they are seldom positively bad. They usually look as though suffering from self-effacement, and any lack of pretension seems to improve the setting of the specimens rather than the reverse. I often think that a showcase is more satisfactory than a window. The only case, it seems to me, where a window is really successful is in those plate glass and gold businesses where life-size carbons of fashion leaders, beautifully colored enlargements, plush or gold Florentine frames, etc., form the attractions. In a "quieter" business—if I may use the term—where platinotypes, aristotypes, carbons, etc., and in reasonably small sizes, form the usual thing, the specimens look lost in a window. Either they are scattered thinly about or they stand in serried rank (it seems a very difficult thing to dress a window with cabinets and without suggesting either emptiness or crowding). And small prints cannot be well seen in a window; they are too far from the examiner, and can be seen but from one view-

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point. The window, too, has the almost fatal disadvantage of requiring a considerable display of work; and very few are the photographers who can show a large quantity of work without including some of his less successful. This question is emphasized when he comes to change his display, as he should do more or less frequently.

Even where the photographer is happily limited to a showcase he faces the danger of overcrowding. An old custom is to fill a frame "chock full" of cabinets in rows. These are held in position by large headed brass nails, each head gripping a corner of four mounts. A less crowded selection would prove more effective; and the time is here when framed specimens should be more generally shown. A case of four or five small prints, each tastefully framed, will often attract more favorable attention than will two dozen cabinets arranged in half a dozen close-packed horizontal rows, four in a row.

EXPRESSION IN PORTRAITURE.

BY J. E. WATSON.

In looking over a collection of photographic portraits three things impress themselves on me. The eyes are dull and lifeless, a hard, marble effect in retouching the negative, and, finally, an entire lack of expression in the face.

The eye is the window of the soul, and failure to portray that important member means losing the best in the individual photographed.

A careful study of paintings by masters of portraiture is necessary to every photographer who wishes to excel in his art. I am aware that fine paintings are not easily accessible to everyone, but reproductions are, and at a very small cost. I have found a carefully kept scrap-book to be a most valuable aid in study. Go over the back numbers of the *Century* and *Harper's* and cut out every portrait you find there copied from men of acknowledged worth—avoiding all engravings from photographs—paste them in your scrap-book, and you will always have at hand a valuable library of reference in posing, lightings and expression. Use it as a text-book to find out the principles of lighting and the method of work used by artists, and not as so many pictures to be copied in a servile manner.

You will see with what care the eye is portrayed, whether raised or lowered, laughing or dreaming; it is always the attractive feature of the face. To secure expressive eyes in photography care in lighting, care in securing the right direction of the eye, and as short an exposure as possible are necessary. Retouching should be almost entirely done under the skylight by careful lighting. Then when the negative is retouched with the pencil do not follow the old hard-and-fast rules of retouching, but carefully blend in the rough and spotted parts of the face to get the same texture that is in the smoother parts of the flesh. With care and skill the lines at the corner of the mouth can be turned up, giving a happier expression to the mouth, and other little defects overcome which will help in the final result.

Very few photographers realize what control they have in fine portrait work by the aid of skilful retouching. A lack of expression in the face can usually be traced to the photographer. The reception of the sitter by the photographer, taking too long a time in posing and an uncomfortable chair to sit on, all these little details must be carefully looked after. Place the sitter on a chair so high that her feet will not touch the floor, or in one of those wonderful productions of *papier mache*—and you are certain *not* to get a pleasant or satisfactory expression.

Avoid the appearance of being in a rush. No one likes to be hurried. Be cheerful, but not funny or over familiar. Have everything about the skylight in working order, and with careful, quick work you will secure that rare quality of expression which is above all other things the quality which makes a portrait pleasing and desirable.

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THE CHEMISTRY OF CHROMATE PRINTING.

BY LEWIS OUGH.

I.—THE CARBON PROCESS.

THE term "carbon printing" is applied to those methods in which a pigment that may be, and often is, carbon or charcoal is incorporated with gum, albumen, gelatine, or other organic substance, and applied as a coating to the paper. This "plain tissue" is sensitized by treatment with a neutral or slightly alkaline solution of potassium bichromate, or a solution of this salt may be added to the organic mixture with which the paper is coated. As, however, after being sensitized its keeping properties are said to be uncertain and variable, the worker is recommended to sensitize the pigmented tissue as required. The tissue thus prepared must be very carefully protected from light and moisture.

Mungo Ponton, of Edinburgh, noted many years ago that certain organic bodies, notably gelatine, if treated with a chromic salt, such as potassium or ammonium bichromate, and, spread on paper or other medium, dried and exposed to the action of light, are no longer soluble in warm water. It is due to this chemical fact alone that the process of carbon printing has been developed. The bichromate by itself is not acted on by the light, and it is only in the presence of the organic matter that alteration is brought about.

The explanation of this peculiar change is as follows: Several metals, of which chromium is one, form two separate and distinct oxides, the higher or chromic oxide (Cr_2O_6) and the lower or chromous oxide (Cr_2O_3). Now the former, which is practically contained in the bichromate, by the action of light in the presence of the gelatine gives up a part of its oxygen to that substance, and is itself changed to the lower oxide, and the liberated oxygen unites with the gelatine, which it oxidizes to an insoluble resinous substance—that is to say, a substance only soluble in water in proportion to the duration and force of the actinic rays; and it is probable that the insoluble compound thus formed contains chromous oxide as an essential constituent. The length of exposure to light may be diminished, by even seven-eighths, by withdrawing the print from the light and leaving it in the dark, as the printing action, once started, continues gradually. On development, after the lapse of several hours, the picture will be found to be fully printed. It has been demonstrated that this continued action only takes place in a moist atmosphere. The reduction of the higher oxide of chromium is readily shown by acting on chromic acid with alcohol. If a small quantity of alcohol be dropped on chromic oxide, the liberation of the oxygen is so violent that it ignites the alcohol.

From the explanation of the chemical processes involved, it will at once be seen that development—that is, the removal of the unaltered gelatine—must be performed on the back of the exposed gelatine film, and on that account a temporary support is necessary. After development by warm water the film, which with the incorporated pigment now forms the picture, is ready to be transferred to its final support, these processes, of course, being purely mechanical. The resulting print consists only of oxidized gelatine chromous oxide, and the pigment, if thoroughly washed till free from soluble salts, should be quite permanent under ordinary atmospheric conditions.

II.—THE OZOTYPE PROCESS.

In this method of photographic printing the nascent oxygen (or ozone) is transferred under the influence of light from one metallic compound to another, and on this account the name "ozotype" is considered a fitting one for the process.

Briefly, the details of manipulation are as follows: The gelatinized paper is sensitized with a solution containing a bichromate or other similar light-sensitive compound of chromium manganous salts, together with aluminium sulphate as a hardening agent, a preservative such as boric acid, and a small quantity of gum or dextrine. After drying and exposing under a negative in the ordinary way a brown

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positive print is produced, and after washing with cold water to rid it of unchanged salts the brown image remains on a white ground, which is developed by a somewhat complicated process. Ordinary carbon tissue, or tissue of a somewhat similar composition, is immersed for about ninety seconds in a weak solution of acetic acid and hydroquinone, with or without sulphate of iron. The washed print, after being coated with a 2 per cent. solution of gelatine, is also plunged into the above-mentioned acetic solution. The two are brought together, removed from the solution, and squeezed on a flat surface. After drying, the print and its adherent tissue are ready for development. This is accomplished by treatment with warm water, which first removes the backing of the carbon tissue and then washes away those parts not rendered insoluble by the action of the manganese and chromium compounds in the print. With regard to the chemistry of this method, as explained when dealing with the carbon process, chromium forms two very distinct oxides, and we may look upon bichromate of potassium as containing the higher Cr_2O_6. Now, in the presence of light and an oxidizable body, in this instance the maganous salt, the chromic oxide is decomposed into the lower oxide, Cr_2O_3, and oxygen. This nascent oxygen or ozone immediately attacks the manganous salt (and for this purpose it may be looked upon as containing an oxide of manganese, probably MnO), oxidizing it to a higher oxide, MnO_2. The brown positive image is practically due to this oxide; so before exposure the surface of the paper contains the very soluble Cr_2O_6 and a manganous oxide. After exposure an insoluble image is produced, consisting of Cr_2O_3 and MnO_2; in fact, a portion of the oxygen has passed from the chromic oxide to the manganous salt, reducing the former and oxidizing the latter.

Next comes the developing process. The acetic acid in the presence of the manganic oxide (MnO_2) probably converts the Cr_2O_3 again into Cr_2O_6, which, being soluble, is absorbed by the gelatine, and this being acted on by the hydroquinone or other reducing agent the gelatine is again changed into Cr_2O_3 and oxygen, which, it will be noticed, are the same two substances that render the gelatine insoluble in the autotype process. When ferrous sulphate is also used some of the liberated oxygen possibly acts on this, forming ferric oxide, a very stable salt, which settles on the image. The altered gelatine with its pigment is not removed by washing, and this, together with the Cr_2O_3, MnO_2, and oxide of iron, constitutes the finished picture.

It is stated that by acting on the finished ozotype print with an acidulated solution of a soluble aniline salt pictures in various aniline colors may be obtained; but the writer has not succeeded in producing satisfactory results by this method.

The principal advantages claimed for the ozotype process are that (*a*) the image is visible during the process of printing, and when washed is permanent; (*b*) the picture, being produced on the material, does not become reversed in the operation; (*c*) as the soluble chromium and other salts are thoroughly washed out before development, the hands do not come in contact with any deleterious solutions.—*Science Gossip.*

FILMS.

BY E. W. STEWART.

THERE is a feeling as old as film photography that films have some inherent defects or inconveniences. Some old and experienced photographers are as emphatic in their statements about the value of glass as a support as they used to be about the advantages of wet collodion in the days when dry plates were young. The old boys are fully entitled to their opinions, but it seems unfortunate that prejudice should be responsible for a misapprehension which sometimes deters those who would otherwise take advantage of the convenience of films.

For a long time I held to the too common prejudice until it dawned upon me

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that if half the reports were true film photography must inevitably have died almost as soon as it was born. Another curious discovery was that the mere button presser, the man who does not know the A B C of photography, but who lets the dealer do the rest, got a smaller percentage of failures from his spool of films than from his magazine of plates. There are obvious reasons for this, and the fact is there.

The great value of films lies of course in their convenience. I have gone on long journeys by land and by sea with a light, spool loaded, collapsible camera in one pocket and half a gross of exposures in the other. Films were not only possible but easy, where glass was absolutely out of the question.

The makers of films issue cautions. Once and once only (after I had lent my camera) I removed the spool and developed the other man's exposures. One of them was apparently a non-exposure, for it fixed out clear except a couple of black streaks. I showed it to a veteran film user, and he was much interested. "I've always wanted to see those 'electrical discharge marks like branches of trees' that the makers caution us against. I wonder if this is what they mean?" So he like myself had evidently missed the "usual difficulties."

I always develop my own films, usually cutting them up first, but keeping five or six 4 x 5 films in a 7 x 9 dish. I use the approved formula, and I take no special care except to not develop when the weather is oppressively hot. The only precautions that I take are in using a safe light—I have made one of Howard Farmer's bichromate lamps—and to avoid under-development.

It seems to me that the true amateur and the out-door professional must work more in the convenience of small sizes, and make his large prints, not by means of a cumbrous glass negative, but through the enlarging camera.

TEMPORARY AND PERMANENT SUPPORTS FOR CARBON PRINTS.

BY T. R. CROSSFIELD.

WERE a beginner to come to me for advice, telling me he was going to take up the carbon process, I should most strongly advise him not only to buy his tissue but to buy his transfer paper or support also. It is only by so doing that he can be sure of localizing any errors he may make, and so can perfect himself quickly in one of the most beautiful of photographic printing methods.

A time will come, and come very quickly, however, when he will have passed this stage, and will want to employ some particular fancy of his own in the matter of paper. The papers which are supplied ready prepared are both numerous and varied, yet they bear only a small proportion, indeed, to those which it is possible to use. There are many of most suitable tint and of attractive use, which cannot be purchased ready for use as final support, but which can be treated readily, and so made available.

The Autotype Company, in their excellent "A B C Guide to the Making of Autotype Prints in Permanent Pigments," advise that the selected drawing paper should be treated with a solution made as follows: "Nelson's flake gelatine, one ounce; water, one pint. Soak and dissolve by means of heat; dissolve twenty grains of chrome alum in one ounce of warm water and stir briskly into the gelatinous solution, adding the chrome alum solution very gradually. Pin the drawing paper upon a board and coat it with this solution, using a broad camel's-hair brush, and putting on the solution evenly all over; allow this to dry and then go over it again in a similar manner."

In another portion of the same book another formula for this purpose is given, which is as follows:

Nelson's No. 1 gelatine . .	1 ounce.
Water	1 pint.

Dissolve by gentle heat.

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Chrome alum	20 grains.
Water	2 ounces.

Dissolve and pour very gradually and in a thin stream into the gelatinous solution, stirring vigorously all the time.

The difficulty which the amateur is likely to encounter in working with one or other of these formulæ is the throwing down of his gelatine in an insoluble stringy form on the addition of the chrome alum solution. This is very prone to occur, either because too much chrome alum is used, or its solution is too strong, or it is added too quickly. It will not occur if the formula is adhered to strictly, but as it only needs a very slight departure therefrom to spoil the mixture altogether some other method may be adopted.

A method communicated to me by Mr. Gibb, of Bath, who made some very successful large-size carbon prints a few years ago, was free from the risk of this precipitation. He dissolved twenty grains of chrome alum in a pint of water, and in this he then soaked the gelatine until quite soft, then effecting its solution by warming the liquid.

In the early days of carbon work transfer papers were often made in which the sizing was done either with an alcoholic or an aqueous solution of resin or shellac. Thus, if three ounces of shellac and an ounce of borax are boiled together in a pint and a half of water, a solution of the shellac is obtained in which the paper which it is proposed to use is immersed and hung up to dry. I am able to speak very highly of transfer paper prepared in this way, having used it extensively some years ago, although of late I have employed a formula to be subsequently referred to; not, however, because it yields any better paper, but merely on account of the greater ease in preparing it.

Somewhat similar to this method is one described in Johnson's patent of 1877, one of the most important of the carbon process patents, but, of course, long since expired. In this case the paper was immersed in a solution of white shellac in liquor ammonia, to which albumen had been added. Two parts of shellac are dissolved by means of gentle heat in one part of strong liquor ammonia, one part of white of egg, and twenty parts of water. The solution is filtered before use. This solution was devised for the treatment of *papier vegetable* and similar very thin papers.

The following method is one which I always follow in my own practice now as being the easiest and most certain, doing away as it does with any risk of precipitating the gelatine when preparing the solution. The paper that has been selected as the support is immersed dry in a warm solution of one ounce of Nelson's No. 1 gelatine in thirty ounces of water. It is allowed to absorb as much of this as it can pick up in five or ten minutes, turning it over once or twice to make sure it is free from air bells, and is then hung up to dry. When dry it is immersed at any time before use in Schering's photoformaline one ounce, water ten ounces, rinsed in two or three changes of water, and either used while still wet or allowed to dry and put on one side until required.

After all, there are quite a number of excellent drawing and similar papers on the market that can be used as single transfer paper without any preparation at all, and one well-known carbon worker recently remarked in the writer's hearing that he never used any but ordinary drawing paper of one texture or another, and never gave it any preliminary treatment whatsoever. Such a proceeding may be successful enough, but I cannot help thinking that it is rather risky, especially in the case of large work, to use the paper unprepared.

Besides, as I have endeavored to show, the preparation of transfer paper is a very simple matter.—*Photography*.

CARBON TISSUE comes in rolls 30 inches wide and 12 feet long. It is not always easy to unroll if dry, and should be laid in a rather damp place a day or so before cutting up.

The printing is done in two ways, single and double transfer. If single is used, either a film negative or a stripped one should be used, for otherwise the picture would be reversed, and what should be on the right will be on the left, and the left on the right. By printing through reversed films we correct that and save one transfer.

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DIRECTIONS FOR DRAWING IN BLACK AND WHITE.

BY MAJOR-GENERAL J. WATERHOUSE, IN "CAMERA-OBSCURA."

ONE of my earliest duties after resuming charge of the photo-zincographic operations in the surveyor-general's office at Calcutta was to frame a set of rules for the drawing of the departmental field maps in a manner suitable for reproduction to full scale or reduction by photo-zincography. These maps had for a long time been very beautifully drawn in fine pen-and-ink and finished off in colored washes, so that although they were very suitable for reproduction by lithography or hand-engraving, it was impossible to produce satisfactory results from them suitable for immediate publication by the quicker and cheaper method of photo-zincography. A new style of drawing had to be introduced and the requirements of the photographic process made known. My predecessors in Calcutta had already done something in this direction, and much had been done in the great trigonometrical survey drawing office at Dehra Dun, but the requirements were generally very imperfectly known. Besides its principal use in reproducing maps of the official surveys, the advantages of photo-zincography were quickly recognized by engineers and other public officers requiring accurate reproductions of plans and drawings, and at that time—in the early seventies—the government of Lord Mayo was opening out new lines of railways and other public works. We were constantly being asked to reproduce subjects which were quite unsuitable for photography, and were expected to transform roughly-drawn and often highly-colored drawings into finished lithographs by photographic means. A good deal of such work had perforce to be lithographed, with greater delay and expense. The need of some definite instructions for the preparation of suitable drawings, both for the requirements of the survey and other government departments, became urgent.

The following are the rules which were drawn up:

1. The drawings should be made on a white, smooth-surfaced paper, fresh tracing-cloth or paper, or, best of all, fine Bristol board. When possible, the drawing should remain stretched on the drawing-board, and in any case should ke kept as clean as possible and free from pencil-marks, creases and wrinkles. Little defects, which may scarcely be noted on the original, frequently attain undue prominence in the photograph.

2. The best ink for this purpose is Indian-ink, which should be freshly and evenly rubbed down and be sufficiently thick to give a good, full, black line, free from grit or glaze. [The new "process" black inks are also useful, and being in liquid form do not require rubbing down.] A little yellow pigment, such as gamboge, or, preferably, burnt sienna, may be added to strengthen it. Captain Hannot advises rubbing down the ink in a very weak solution of bichromate of potash, which serves to render it quite insoluble. In adding yellow to the ink, care must be taken to use a pigment or other coloring-material which will not spread beyond the lines, especially when drawing on tracing-cloth. Burnt sienna will always be safe and efficient.

3. All lines should be drawn firmly and clearly, not too fine nor too closely together. Even the finest lines must be quite black. Light effects must be produced by making the lines thinner and increasing their distance apart, and not by the use of pale ink. In removing pencil-marks after the drawing has been lined in, great care must be taken not to destroy the blackness and firmness of the lines by too much rubbing, otherwise they will appear quite rotten and broken when reproduced.

4. Cross-hatching and shading should be drawn open, and in clear, firm lines. Intensity of shade should be shown by an increase in the thickness of the lines, rather than by their being placed close together. It must be borne in mind that throughout the process there is a tendency for the lines to thicken, so that if they are too close they are liable to block up in the printing, and the work will appear heavy and unsightly. This rule also applies to hill-shading, the darker portions of which should be drawn in thick, distinct lines, but not

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crossed and recrossed or filled in with fine line or dots.

5. In drawing maps it is better to leave river-courses, coast-lines, lakes, ponds, or tanks blank, and not filled in or shaded with fine lines. They may be indicated on the original by a pale wash of blue without detriment to their reproduction.

6. Similarly, in mechanical or architectural drawings, ruled tints and shades are better left blank on the original, or shown by light tints of blue, violet, or an aniline red, such as roseine or magenta. Engraved tints in lines or dots can be transferred on the stone or zinc-plate afterward, and will have a much neater effect than tint-lines reproduced directly from the original.

7. Washes of any color, except pale blue, violet, aniline red, or other colors which will not reproduce as dark tints when photographed, are absolutely inadmissible in drawings for reproduction by photo-lithography. If necessary, outlines may be drawn in some pigment which will reproduce black, such as strong carmine or red, brown, yellow, or green. Details required to be shown in the original, but not in the copy, may be drawn in pale blue, aniline violet or red spots; stains and details not required to be reproduced can be painted out with Chinese white (or albanin).

8. Whenever it is possible, the original drawings should be on a larger scale than the reproduced copy. Defects in drawing are lessened by reduction, and the result generally is finer and sharper than a reproduction to scale could be.

9. In preparing drawings for reduction care must be taken that the lines, lettering and detail are drawn of sufficient thickness and size, relatively to the scale of reduction, so that they may be clear, distinct, and in proper proportion together when reduced, and not be so fine or small as to be either quite lost or illegible. [$\frac{1}{400}$ of an inch is about the finest line that can be reproduced to scale.] Thus, if it is required to reduce a drawing to one-third the scale of the original, every line must be drawn three times as thick, and the details three times as large in all dimensions as they are required to be in the copy, Sufficient space must also be left between lines of shading or cross-hatching to prevent their blocking up and running together in transferring and printing. [$\frac{1}{100}$ of an inch is about the smallest open space that can be kept clear in photo-lithographic work.] Practically, it is sufficient to draw the original from about one-and-a-half to twice as large as the copy to secure all the advantages of the reduction, and the originals will also serve for reproduction, if necessary.

10. It will save confusion and mistakes if the scale on maps, plans, or other drawings intended for reduction is shown in terms of a single unit of measurement, such as inches or centimetres, feet or decimetres, yards or metres, miles or kilometres, and not as relative to any second unit, as inches to a foot, mile, etc. It should be shown simply as a scale of feet, yards, miles, etc.

11. Drawings or tracings intended for reproduction should not be folded, but kept flat or rolled. Folding causes creases which produce shadows on the negative in reproduction, and these may obscure and spoil other details. It is a good plan to pass a creased drawing through a copper-plate or lithographic press before it is copied. [If such a press is not available, ironing with an ordinary laundry-iron may answer.]

12. It must be borne in mind throughout that photography will only produce a fac-simile, and that, as a rule, the original will not be in any way improved upon, though by reduction its defects may not be so apparent. Rough, coarsely-drawn work will not appear like fine engravings, nor bad, illformed writing like letter-press or like copper-plate. Therefore, in making drawings for publication, care must be taken to give them the requisite degree of neatness and finish before they are copied, so that the result may be fit for immediate issue, and not require alteration and touching up, which involve delay and expense, besides often damaging the work on the stone or plate before it is printed.

The essence of these rules may be summed up in a few words: White, smooth paper; black ink; firm, open drawing. Success in the after processes depends entirely upon the perfection of the original drawing and its capability of giving a negative with clear, transparent lines on a perfectly opaque ground; and this cannot be done

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unless these essentials are carefully observed.

These rules were, I believe, almost the first in which the conditions for successful reproduction of black and white subjects by photo-lithography were laid down. They have frequently been quoted by other writers on the subject, and although the conditions of photographic reproduction have altered very considerably during the last few years by the introduction of the half-tone processes of block printing, they still remain quite applicable to all reproduction of subjects in pure line.

THE USE OF SENSITIVE PAPER IN X-RAY WORK.*

BY M. I. WILBERT.

THE use of so-called "bromide papers" in X-ray work is, of course, not new or original. Röntgen himself, in his early publications on the subject of the X-rays, intimated that he had used sensitive photographic paper in the course of his investigations and experiments, and many, if not all, X-ray operators have from time to time made use of this variety of photographic material in their experimental work. The objections that most experimenters have had to contend with in the ordinary commercial brands of paper is the fact that the surface of even the so-called smooth paper is a decided matt. This matt surface gives the resulting picture the appearance of being buried in the texture or pores of the paper, with a consequent loss of much of the necessary detail. The finish or surface of this matt surface paper is of such a nature that squeegeeing on glass or ferrotype plate does not materially improve the surface or appearance of the picture.

Of late years several manufacturers have put upon the market a glossy variety of developing paper as a substitute for or to compete with the well-known varieties of printing-out papers. This glossy variety of developing paper has the advantage of keeping the image on the surface, and for this reason is well adapted for the reproduction of more detail in the picture.

It should be remembered that the developing papers now on the market vary greatly in speed or the amount of exposure that is necessary to produce the latent image, and it is obvious that the slow varieties now so extensively used, especially by amateurs, and in which the sensitive silver salt is composed largely if not entirely of a chloride, are not at all suited for X-ray work. We must confine ourselves, therefore, to the older and comparatively rapid bromide papers.

The particular paper that I myself have been most successful with is a comparatively new German brand of bromide paper now being introduced into this country. It is made by the "Neue Photographische Gesellschaft," in Berlin, Germany, and is marketed in different grades of smooth, glossy, and rough; it is coated on what appears to be a very excellent quality of paper stock.

The glossy variety is one that is best adapted for X-ray work, on account of the smooth finish and fine texture of its surface. How well it is adapted to this particular purpose may be determined by an inspection of the samples shown here.

The question naturally arises, What possible advantages are to be derived from the use of sensitive paper instead of glass plates? The possible advantages are many, and it is my purpose now to call attention to some of the more evident points of vantage as they have occurred to us while experimenting with the various brands of bromide paper available at the present time.

First, the matter of price. In this the use of paper would result in a saving of from 40 to 60 per cent. of the cost of dry plates. Other things being equal, this one feature alone would be of sufficient importance to ensure the very wide use of a sensitive paper that could be relied on to give satisfactory results under all conditions and at all times.

Another advantage is the saving in possible breakage. Every X-ray operator has

* Read before the Section of Photography, Franklin Institute, November, 1901, and reprinted from the Journal of the Institute.

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had experience in this line. The breaking of a glass plate usually occurs toward the end of an exposure, and always in a case that has necessitated a considerable amount of care in the preparing for and patience in making the exposure. The ominous click that accompanies the accident not only means the loss of a rather expensive plate, but also a waste of the time and energy that have been expended in preparing for and in making the exposure. Nothing of this kind is at all likely to occur with paper, so that the exercise of ordinary precaution would ensure us against any possible danger of wasted exposures.

The facility with which the resulting pictures may be stored will, of course, appeal to all, as the difference in bulk and weight is self-evident. One feature of considerable importance in this connection is the fact that the name of the patient and all the necessary data relating to the case or the making of the exposure may be written on the back of the exposed sheet before development, in this way obviating any possible chance of making a mistake by confusing two or more of the resulting pictures.

Many physicians who are not familiar with nor in the habit of looking at photographic negatives cannot see detail in a transparent plate, and consequently prefer to have a print. This opens up another possible find for sensitive paper. Not only would the use of this paper obviate the necessity of making positive prints, but we may, if we choose, utilize the paper in combination with glass plates for the same purpose. By exposing a piece of paper and a glass plate at the same time and developing them in the same solutions, we not only make the paper print and the glass negative at the same time, but we also, in addition to this, have a more or less valuable means of control, for by comparing our results a possible flaw in the plate could not possibly be mistaken for a pathological condition of the part of the patient radiographed.

If for any reason we desire to have two or more prints of the same subject, we can readily obtain them by exposing the required number of sheets of paper at the same time. The paper itself offers little or no resistance to the rays, so that we can expose a dozen sheets as readily as we could one.

Probably the greatest advantage is the rapidity with which we can obtain the desired information. Those of you who have had any experience in this line well know how anxious the doctor usually is to see the result of the exposure; you also know that a plate in the process of development is not always the most reliable source of information, so that under ordinary circumstances we are obliged to wait until the plate is sufficiently fixed to be transparent. This extra wait for the fixing bath can be avoided by using paper, as after proper development and a thorough rinsing in water the resulting picture may be examined in broad daylight without any appreciable damage by fog or other change of the residual silver salts. The necessary fixing in hypo may be done later.

These are but a few of the possible points of superiority that have presented themselves to us while experimenting or in the regular routine use of the X-rays.

There are, of course, drawbacks and defects in paper at the present time. One of them is the comparative slowness of the emulsions used on ordinary bromide papers. This, to some extent, has been overcome by this same German company in what they call their negative paper, the emulsion on which is much richer, and consequently more rapid than that used on their regular grades of paper. This negative paper is very thin, and is intended to replace celluloid films and also the various kinds of stripping films that are at present being re-introduced and used quite extensively, especially in Germany. This thinness or transparency of the paper would also tend to do away with another rather serious objection to heavy bromide paper—the tendency for an image, especially of the heavier portions of the body, to veil over or fog; a perfectly transparent paper would give us all the possible advantages of a glass plate in this respect. There remains but one more serious question, and that is the keeping quality of paper coated with a very sensitive emulsion of silver salts; and while this may be a serious or rather a difficult problem, there appears to be no positive reason why manufacturers

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cannot obtain a paper that will not affect the sensitive salts in the emulsion.

In addition to its use as a substitute for glass plates in taking the impression direct, glossy bromide paper can, of course, be used to advantage for reproduction or the making positive prints from X-ray negatives. For this purpose the German brand of paper also has some points of superiority, for in addition to its being a very rapid paper, so far as the time necessary for exposure is concerned, it has the added advantage of being a slow or rather steady developer, so that we have considerable latitude in this step of the process, and can modify the resulting picture to a considerable extent by either accelerating or retarding the same in the course of its development.

Those of you who are in touch with or consult German photographic or X-ray journals will probably recall the really beautiful reproductions on bromide paper that these journals occasionally contain. This so-called method of "light printing," while it appears to have originated in this country, does not seem to have been developed or followed to any considerable extent. [Abandoned here some years ago. —Ed. W. P. M.] In Germany, on the other hand, it has evidently been developed into a distinct branch of the printer's or, rather, the photographer's art. The printing and developing of these pictures is done automatically by means of specially constructed machines, and it would appear that there was a possibility of developing this same method of photographic printing in this country so as to make it available for illustrating books and periodicals in cases where the presentation of detail is considered of sufficient importance to assume a possible slight increase in cost.

PARAMOL—A NEW DEVELOPER.

Writing in the *British Journal of Photography* Mr. R. Jahr, of Dresden, gives the following information concerning the new developing agent, paramol, which, we learn, will soon be obtainable in this country:

Another Richmond in the field! If further proof were needed that the photographic industry is likely to become one of the world's large industries, it might be found in the fact that very large and important chemical works turn their attention to the needs of the photographer. This time it is the *Farbenfabriken, vorm-Friedr. Bayer & Co., Elberfeld* (Photographische Abteilung), one of Germany's largest coal-tar dye works, that is sending out a new developer that stands *between* the so-called *rapid developers*, as Metol, Amidol, Rodinal, and the *slower developers*, like Pyro, Hydroquinone, Glycin. The chemical name of this substance is *o—Amido meta oxy-benzyl alcohol.* I had occasion to make a trial with one tube containing the mixed substances, the paramol, alkali and the preserver, and I found it to be a splendid developer indeed, giving in four-minute times a rather over-developed negative of almost too much vigor, and working very clear at the same time. The image was brought out rather quickly, and afterward density and detail came up simultaneously, so that the new agent seems to give a very manageable developer. It is said to be rather sensitive to the addition of bromide, dissolves in 12 parts of its weight of water, and may be used with the carbonates as well as with the caustic alkalies. Its keeping qualities are claimed to be very satisfactory. It may be used for negatives, diapositives and papers. The tone of the negative developed by me was rather a little too bluish for my taste, but that may perhaps be altered by making up the developer in another way.

Tried side by side with my pet Pyro-developer, with Chapman-Jones' plate tester, the Paramol brought out in 5-minute times the lower numbers decidedly stronger, but there was a little more fog than on the absolutely clear pyro-plate, and the gradation seemed to be a little steeper. The first numbers appeared after four seconds, temperature of developer being 20° C. (68° F.). The developer works remarkably clean.

When Mr. Howard Farmer demonstrated in such an able manner the advantages of liquid filters—in his case pot. bichromate

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solution—for dark-room lighting, the difficulty of getting suitable receptacles for the colored solution may have stood in the way of adapting this principle more largely. Mr. Eggenweiler, of Raabe, known by his excellent studio-construction, had the clever idea to adapt the common flat, round travelling flask with screw-stopper to this purpose, and has patented dark-room lamps of such a construction. One of those lamps, the flask of which had about 3½ inches diameter by about ¾ inch thickness, I tried with Chapman-Jones' excellent and very useful and convenient plate-tester on a non-orthochromatic and an orthochromatic rapid plate prepared from the same batch of emulsion. The distance of screen from flask (this is probably filled with the strong bichromate solution, the spectroscope showing that all blue and violet, and even almost all blue-green, is absorbed) was about 15 inches, and the exposure in both cases 5 minutes. The first plate showed, as last number, the 11 very faintly, while on the orthochromatic plate the 25 was seen, and this last square showed about the same density as the 11 on the other negative. The 1 in the ordinary plate was about as dense as No. 10 or 11 in the orthochromatic plate. Would this mean that the orthochromatic plate is, according to the values given by Mr. Chapman-Jones, 128 times more sensitive to the rays passed by the bichromate filter than the non-orthochromatic? The light given by the dark-room lamp was ample, and rapid plates developed by it with usual care showed no fog whatever.

TINTED PHOTOGRAPHS.

BY ROBERT MELVILLE.

A FEW months ago we were shown a very effective "sunset" picture. It was a snow scene, printed in carbon, and with the slightest flush of rose over the snow. The whole picture was very pleasing owing to the delicacy of its tint. It was brought to us by a couple of well-known photographers who wished to know exactly how it was done; it was evidently not a simple case of colored tissue.

This print was an old one and doubtless made by the method patented just twenty-five years ago in England, though we believe that, like many patents, it was merely a specification of a method which had been worked some time before.

The prints are developed on collodionized glass, the collodion being tinted and applied to the glass on which the picture is developed. Body colors should not be used in this method; but in the alternative method we believe they are admissible where the colored collodion is applied to the developed print after it has been alumed and dried and before final transfer. We give the methods thus briefly, as at the present day they are scarce worth more space. There is another method which we have seen used with effect, and which is at least worth mention. It is simply to put the tint into the paper support. White paper should be tinted by the photographer, to requirements, by floating some ordinary paper of good quality on a solution of gelatine, tinted as required, and containing a little chrome alum. By tinting the paper effects of seascapes, moonlight, etc., can be obtained more delicately than by using a colored tissue.

Cleaning Daguerreotypes. Mr. Robert Melville also writes: "I have received a couple of letters on this subject, and in reply I append a brief clipping which I obtained from an English paper, I believe. I may say that the method has proved successful in my very limited experience with daguerreotypes. The clipping reads as follows: 'First flood the plate with alcohol, then wash under the tap until the water flows quite evenly over the surface. Next apply a weak solution of cyanide of potassium to the image, and rock the plate gently until the tarnish and discoloration go. If a continued application is ineffectual, the strength of the cyanide must be increased. Afterward wash the plate, first under the tap and finally in distilled water. The plate must be dried by heat

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over a spirit lamp, and it is important that no check should take place during the evaporation, or an ineradicable stain will ensue. It may be pointed out that daguerreotypes do not fade, but that a tarnish creeps over the plate. This tarnish can only be removed in the method indicated. On no account must any friction be applied to the surface, nor must it be dusted with a brush. The least touch damages the surface of the film. Sometimes defects apparently due to the daguerreotype itself are really only a change in, or a deposit upon, the cover glass. In this case the remedy is obvious. Remove and carefully clean the cover glass.' "

METHODS AND FORMULÆ.

Standard Sizes in Photography. In the days of Daguerre the sizes of photographic (metal) plates were the ninth, sixth, quarter, third (4 x 5), half, and whole plate (6½ x 8½). These sizes, from quarter upward, are still standards, and in England are universally known by the terms quarter, half, or whole, as the case may be. With the introduction of paper (calotype) negatives larger sizes came in, 8 x 10, 10 x 12, 12 x 15, 15 x 18, and 20 x 22. Why these sizes were selected is rather a mystery; they are utterly erratic as regards relative proportions, and they are invariably too square for what is unanimously conceded to be the most pleasing shape. It is interesting to note that all the styles which have been fashionable have been violations of the squareness of these standards. The carte-de-visite, especially, which runs about 2¼ x 3½ inches, is very pleasing in its proportions, and yet there is no plate made to its dimensions. The very poor photographer takes it on his almost square plate and trims to size; the photographer with a larger studio camera usually takes two negatives side by side on one plate. We have no standard plate nearer the ideal than 5 x 7, and the portraitist still pares a strip from either side of his print, while the landscape worker prunes foreground and sky.

New Method of Sizing Paper. Gelatine sizing is attended with some inconvenience. I have tried casein in a certain form, and find it preferable. There are two distinct forms of casein entirely different in their behavior, according to the method of preparation, one giving an insoluble substance, the other a readily soluble one. I employ the latter.

Take a quantity of skim milk, the more it is skimmed the better, for every particle of cream or fat must be removed from it.

To do this place it in a large funnel and cork up the neck. Support the funnel in a vertical position, place the milk in it, and allow it to remain all night. Now carefully remove the cork and draw off the skim milk and place in another vessel. There are still traces of fat in it which can only be removed by chemical means.

Add to the skimmed milk hydrochloric acid until the curds cease to form. Filter out these curds, wash them with dilute hydrochloric acid, and redissolve them in dilute solution of carbonate of soda (washing soda).

Let the solution stand and siphon off the liquid under the film which will form at the top.

Reprecipitate this with hydrochloric acid, and dissolve again in soda solution and again precipitate. Wash in very dilute hydrochloric acid and dry.

Casein so formed may be dried and kept indefinitely. It swells up in film water and gradually dissolves, especially if the temperature is slightly raised.

It makes an excellent size in the proportion of 2 drachms of the dried casein to 10 or 12 ounces of water.—*John Bartlett.*

Enlarging to Natural Size of Subject. Often an amateur wishes to copy a bit of still life, such as flowers, a bird's-nest, or a page of a book, the same size as the original, and is unable to do so with the camera at his disposal. In this case lay a matchstick, accurately cut to the length of two inches, at the foot or side of the subject, parallel to one edge of the focusing screen, and focus it so that it will show on the extreme edge of the negative, where it could

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be trimmed off a finished print. Having taken a sharp negative, any size convenient, make an enlargement on bromide paper (utilizing the camera and lens in the well-known method of daylight enlarging) of a degree of amplification which allows the image of the match-stick to exactly measure two inches, its original size, when the picture will be found to correspond in size to the subject photographed. A sprig of hawthorn, such as may be seen in bloom on the hedges in spring, photographed and enlarged full size thus, makes a capital picture; and numbers of other subjects will suggest themselves for similar treatment.

Dead-black Varnish. The finest lamp-black rubbed up with ordinary shellac negative varnish, or solution of shellac in alcohol, gives a dead-black varnish equally soluble for wood or metal. Paraffin lamp-black is the best to use, and it can be obtained from the chimney of an optical or dark-room oil lantern. Ordinary lamp-black, as sold for mixing in paint, is too coarse to be of any use unless especially ground.

If the surface of the varnish when dry is not absolutely "dead," it contains too much shellac and should be diluted with alcohol. This is a safer varnish to use in dark slides than any kind containing turpentine. It must not be too thick, and should be applied with a camel's-hair brush. It gives a more effectually "dead" surface than most other preparations.

Potatoes and Coloring. It is often difficult to make the color stick to a photograph, both in retouching and in coloring. M. Massias tells of a very simple method, which consists of passing a freshly cut potato over the surface of the image; the color sticks immediately to the parts thus treated.

Backing Plates. For many purposes backed plates are an absolute necessity, while for other kinds of work where they are not imperatively demanded they often are an improvement on unbacked ones, and would be more frequently used if amateurs were familiar with a quick and easy process of backing them. This is expeditiously performed by cutting with a sharp knife for a piece of cardboard about the average thickness of a plate, a rectangular opening of the size of the plate used, and having a margin of about two inches all round. Lay this upon a piece of clean unprinted paper, and fasten with tacks at the corners to a piece of board or the dark-room bench.

The plate to be backed is laid face downward in the opening, and the backing paste spread evenly over the glass with an India-rubber squeegee, either flat or roller. The cardboard form keeps the plate quite steady, thus avoiding abrasions of the film, and confining the backing to the glass side of the plate. A dozen plates can thus be backed in ten minutes. The paste is made as follows: Mix powdered drop-black (or lamp-black will do) into stiff paste with caramel (burnt sugar), and then thin to the consistency of treacle with methylated spirit, in a corked, wide-mouthed bottle; this will keep indefinitely. When applied it dries in two or three minutes, and is easily removed with a damp sponge.

A Slow Reducing Bath. Sometimes, where the reduction of a negative is necessary, it is well to have at command a reducer which will act very slowly, and it is possible that the following bath recommended some time ago by Professor Lainer may in such cases be useful: Potassium iodide, 1 part; hypo-solution (1 to 4), 100 parts. The reduction proceeds gradually without the loss of the more delicate detail. After an hour the action can be observed, and in from eight to ten hours even dense fog will disappear. The gelatine film is not loosened—in fact, a hardening can be observed. Iron, copper, and mercury chlorides, if added to the fixing bath, will also have a reducing action, but are less applicable because they re-act with the hyposulphite of soda. No advantage is gained by using a larger quantity of potassium iodide.

Diluting the Developer. In modifying a developer to obtain soft negatives it is not advisable to alter the proportion of the constituent parts. Make up the developer to the standard strength, and then dilute with water containing sodium sulphite (or the preservative used) in the proportion used in the mixed developer.

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A FLASHLIGHT PORTRAIT
of Mr. Paul Gilmore as Don Caesar
By J. E. Watson, New York

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By J. E. WATSON, New York

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By W. N. BRENNER, Cincinnati

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By W. N. BRENNER, Cincinnati

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By W. N. BRENNER, Cincinnati

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By J. E. WATSON, New York

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By J. E. WATSON, New York

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PORTRAITS

By W. N. Brenner, Cincinnati

The portrait on the left hand is reprinted from our November issue, wherein it was erroneously credited to D. Rosser.—Ed. W. P. M.

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PRACTICAL ADVERTISING.

The Kind that Brings Business.

BY CHARLES P. MARSHALL.

TALK NO. 5.—WHAT ADVERTISING WILL AND WILL NOT DO.

ALL the advertising in the world will not make up for indifferent treatment of the patron and poor work. "Sounding brass and tinkling cymbal" are just as apparent in merchandise as morals, and the advertisement that persuades people to your place only to be treated half-heartedly, stiffly, and bruskly is a curse to your cause. It is "Come into my parlor, said the spider to the fly," in another form, and you are set down as a charlatan and brag.

If you have no milk of human kindness, no courtesy, no cordial ways, cultivate them. Coach yourself before your mirror, when no one is around, and address an imaginary customer. Shake hands with him, greet him cordially, and say the little pleasantries that put a client at his ease. Don't dive into "pictures" immediately upon meeting your customer, for it looks as though you thought of his purse before his pleasure.

The success of a studio depends upon something more than cardboard and chemicals, and if you would open your patron's purse and pocketbook be kind, not caustic. It makes no difference whether a customer is entirely wrong regarding certain prints. It is your duty, not only as a gentleman but as a promoter of business, to be strictly polite and courteous. Remember that your customers are not idiots, and will soon see their error and acknowledge it, thinking more of you in every respect, and bring you more trade.

The successful artist is he who dismounts from his hobby just before a customer enters the door.

Perhaps you think this has very little to do with advertising. If you investigate, however, you'll discover that it has *all* to do with it—that courtesy and kindness are the handmaids of publicity.

Long ago you discovered that the success of a portrait depends largely upon the personality of the artist, and if your patrons believe you are really trying to please them, not simply serve them, you have made a lasting advertisement in their minds which will travel from tongue to tongue. But standing under the skylight with an "artistic" *chip on your shoulder* will sooner or later bring defeat. Be artistic in your work and way, and talk about the artistic in your advertising, but let your customer discover the facts from their genuineness.

Advertising in an indifferent, half-hearted manner by filling the space with cheap, catchpenny, silly say-so's will "strike back" like a boomerang—the community loses faith and considers you an "easy-going, don't-care, side-tracked picture-maker!"

Again, advertising and never seeing the printer's proofs, which often contain errors in spelling and punctuation, is wasting your money and insulting readers and possible customers.

Advertising in "*spasms*"—a few weeks, then quit a few weeks—provokes your readers and proclaims you an experimenter. An intermittent fever is like a will-o'-the-wisp—you never know where to find it.

A Xmas ad. running till February is downright laziness, and ought to lose you business. It is worse than the straw hat ad. that ran till after Thanksgiving. The weather might warrant a thin covering for the head, but St. Nicholas puts up his pack December 24th, 12 P. M.

An advertisement that is cut and slashed by the printer to cram it into twice as small space as designed is money thrown away—people will not read it. "You might get two barrels of apples into one barrel with a sledge-hammer, but you'd better use a cider-press." (Nathan Fowler.)

An ad. that has two or three different kinds of border to enclose it is freakish and rightly criticised by all—they would like as not expect to find the proprietor

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with several kinds of buttons on his coat or a variety of tones to a dozen prints!

Again, an advertisement that describes only one kind of work and finish week after week—year after year—grows stale, and finally ceases to interest—"common as cabbage," says one critic. Some backwoods old fogy may cling to "just one style," the same as his neighbor, the storekeeper, clings to the same old calico prints and shoes; but a modern studio that deals with all classes needs a variety. Aristo or albumen alone won't do in these days. The public is posted, and expects a fair variety in the studio as well as a fair variety of coffee in the grocery.

Many a studio claims to cater to patrician and plebeian, yet have such a limited line of styles and finish it's a wonder they do a living business, and they certainly will cease to do business when "new blood" comes to town and opens a studio across the way with modern methods and ample variety that win him splendid patronage from the start.

Advertising has another hard row to hoe when year after year a business goes *down* —DOWN—DOWN—almost on its last legs—then in a frenzy rushes for an ad. writer to punch it into life, which is hardly possible if the public consider it a corpse. At that late day an ad. only acts as a battery to *dance the skeleton*—it never can revive what is not there—the jig is up, and naught remains but a *dead, dead* concern—antiquated—gone to seed—bloodless and blind!

If the body needs wholesome food and proper medicine occasionally you will provide it at the slightest symptom. Then is it strange that advertising the food and medicine for business should be constantly used and changed at the earliest alarm, and not wait till the sheriff shakes the shutters, and then blow the last stiver in the till to enlist some "magic" advertisement to keep from drowning?

Advertising a short time, then quit and watch for results, is another way to waste money and demoralize business. What would you think of the farmer who dug up his grain a few weeks after sowing "just to see if it *had* sprouted?" He found it "really had swelled and opened the kernels." Then he spent days and weeks speculating and asking his neighbors' opinion "if they believed it would actually grow." After his friends pointed out the little green shoots and assured him the seed was O K, he decides to sow more grain, rushes out the plough and drill and deposits another lot of seed in the soil. Alas, *too late!* The warm rains of spring were over, the drought withered the crop, and the harvest was a fizzle!

Plant advertising, then pull it up and speculate over its potency, fool and fuss away a month or more trying to find out if anyone *had* read it, is a parallel to the farmer. Frantic efforts finally reveal someone who "really had seen the ad.," and assured the advertiser "it was good, what little they saw of it!" Wings couldn't carry him fast enough to the editor, who receives his "copy" with a smooth smile, and next week's paper has startling statements from STUMBLER'S STUDIO! but *just too late* to catch the crowd *that* reason—the tide of patronage had turned another way—the grain was garnered by the man across the way, who *kept his ads. going week after week.* He never let up on the public—gave them no rest—pounded away at their door of reason—made himself felt in the community—gave his town fresh news all about his business—kept them constantly interested. They in turn admired his activity—believed his arguments, visited his place, and *patronized him!* And this same man's work was not quite so good as that of the intermittent advertiser, but he succeeded in interesting the people in his work—persuaded them into his studio and secured their shekels!

Experienced tradesmen will tell you that mediocre merchandise well and constantly advertised will make more sales than better goods sitting silently on the shelves.

Once more—too little advertising—too little space—is a waste of money. Where the type is extra small, allowing no display, the ad. is side-tracked and swallowed by adjoining ads. with proper display. It goes right back to the grain business. You can't raise wheat unless you sow enough to see and work with—a few handfuls scattered in petty patches never come to maturity. The briar and brakes near by steal the moisture and smother it with their shadow—the season wanes, and there isn't enough grain matured to make pancakes!

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Moral——

A MINIATURE IN IVORY

IS GOOD.

A MINIATURE IN ADVERTISING

COME FOR XMAS PHOTOS

Now—don't wait till the last moment, then rush us. It is best to allow plenty of time to give a good finish. You know our studio is famous for its fine gems of portraiture. We are making many beautiful miniatures for Xmas presents. Sittings any day at

ECONOMY STUDIO,

16 Main Street, Tight Town, Texas.

IS GOOD FOR NOTHING.

Our next talk will mention type, borders, rates, etc.

AN X-RAY STEREOSCOPE.*

BY LOUIS A. WEIGEL, M.D.

THE correct interpretation of X-ray negatives frequently presents considerable difficulty, because all parts of an object lying in different planes are projected into one, and there is practically no way of determining the order of superposition of the various planes and of the distance that separates them. This defect of the ordinary skiagraph is readily overcome by making two stereoscopic negatives, which, when placed in a suitable stereoscope, virtually reconstitute the object in space. Every detail of the negative is seen in its proper place, the surfaces appear in their natural form, and the various planes are correctly separated from each other.

The ordinary hand stereoscope is of little practical use for this purpose, because, aside from the time and trouble involved in obtaining prints small enough for this instrument, much of the fine detail of the original negative is lost in the reduction. As is well known, a photographic print, even when of full size, is never as satisfactory for critical study as the negative itself, and when a copy reduced in size is made, its value is still more impaired.

The stereoscope shown in the accompanying illustration is adapted for studying the original negatives, although it may also be used for examining full-sized prints. It is constructed on the principle of the reflecting stereoscope invented by Professor Wheatstone in 1838. In this apparatus two plane pictures, representing slightly different views of an object, are superimposed and appear to the eye as giving the same relief as the object itself.

As seen in the illustration, it consists of a bed-piece upon which, at its centre, two mirrors inclined to each other at an angle of 90 degrees are mounted on a slide having a forward and backward movement to facilitate adjustment. At the angle formed by the mirrors a screen with openings for the eyes is placed.

Two grooved frames for holding the negatives face the mirrors and are adjustable by a simple sliding motion in two directions—one at right angles to the base, and the other parallel with it. In the base of these frames there is also a mechanism, controlled by a milled head screw, for vertical adjustment. By means of these various movements the images of the two negatives reflected in the mirrors may be quickly adjusted until they are accurately superimposed and stereoscopic relief is obtained.

Transillumination of the negatives is

* Reprinted from the New York Medical Journal.

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necessary, and this is best secured by artificial light. The most convenient and satisfactory source of illumination is from an electric light. In my apparatus a sixteen-candle-power lamp is placed behind each negative. Flexible conducting cords from these lamps are wired in parallel to a single key-socket attached to the under side of the bed. An electric light cord of convenient length, and having an extension-plug at each end, is used to connect the apparatus with any available lamp socket in the room. One of the plugs is placed in the key-socket of the apparatus and the other attached to the source of illumination selected. For concentrating the light on the negatives, an ordinary metal shade or reflector surrounds the electric light bulb, which should preferably be of ground glass. An even diffusion of the light is still further secured by having one side of the negative frames covered with a sheet of ground celluloid, which is lighter and less fragile than ground glass. The lamp brackets are adjustable vertically, and as they are attached to an independent base, the distance between the light and the negatives may easily be regulated, according to the varying density of the plates. Where an electric light plant is not available, Welsbach gas lamps or acetylene bicycle lamps may be substituted for the illumination.

The negative holders are square and large enough to take in plates of all sizes up to and including 11 x 14 inches, and may be placed in the frames either vertically or horizontally. For the smaller sized plates it is advisable to use masks of black press board or other material to cut off all extraneous light. The left-hand frame in the illustration shows a mask for an 8 x 10 plate in position.

Although this apparatus is somewhat large, the bed-piece being six feet long, it may be stored in any ordinary closet, as all the movable parts are detachable. The mirrors are fastened to the side by thumb-screws, and are so hinged as to fold upon themselves when removed from the apparatus. The negative frames, lamp brackets, eye-screen, key-socket, etc., are also readily detached, leaving nothing but the bed-piece with the legs; and, as the latter are hinged and fold against the under side of the bed, very little space is required for it. The apparatus may be set up complete for use in less than five minutes.

The Weigel X-ray stereoscope.

I am greatly indebted to the Gundlach Optical Company, of this city, for their kind assistance in working out some of the details of the apparatus and for the very satisfactory manner in which they have executed my design.

The technics of stereoscopic skiagraphy are comparatively simple. It is necessary, however, to follow certain rules to get the best results. In a later communication a full description of the technics for making stereoscopic negatives of the different parts of the body will be considered.

The paper entitled *The Photographer and His Customer* in our December issue should have been credited to the *St. Louis Photographer*. Mrs. Clark will kindly accept our apologies.

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THE CAMERA AS A DETECTIVE.

BY GEORGE G. ROCKWOOD.

WE quote from the New York *Sun* a letter from Mr. Rockwood, which has many points of interest for the photographic fraternity, dealing, as it does, with a field of special work not infrequently brought before the professional photographer.—ED. W. P. M.

"TO THE EDITOR OF THE 'SUN,'

"SIR: My recent letter to the *Sun*, concerning some photographic experiments in the way of developing or reproducing the faded writing of the original Declaration of Independence, has brought me a series of inquiries, especially from lawyers, concerning the application of photography in the possible detection of forged signatures. By the aid of this art alterations or forged writing can be detected when not visible to the natural eye, even when assisted by the most powerful microscope. It is precisely the same principle that gives us pictures of the unseen worlds of the stellar firmament—that is, it records fine shades of color that the human eye cannot detect.

"Many years ago the late William M. Evarts sent to me a series of checks to be tested as to their accuracy and genuineness. The one suspected was only so judged on account of its exact duplication of what was known to be a correct signature. Suspicion was based on the well-known fact that no living man ever writes his signature twice absolutely in the same lines at any time in his life. This suspected autograph of the check was so like one which was unquestionably correct that it excited suspicion; for, when placed in superposition they were exactly alike. I was not told of the circumstance, but asked to photograph the two signatures. I remarked their almost mathematical similarity to each other. On photographing one of them and enlarging it up to about forty inches long, the various touches of the pen showed in a most remarkable manner, and it was demonstrated that one of the signatures—and under the circumstances a very important one—was forged. It had been traced from the other check. The case, I believe, was settled out of court, as the evidence was considered overwhelming by the contestants.

"Photography can be used not only for the detection of crime, but also for its prevention. There was recently an arrest made of a photographer who, it was found, had in his possession a large number of etched zinc plates which had been copied by photography from recent issues of bank-bills. It is perfectly easy, as I demonstrated years ago, to make the counterfeiting of valuable documents and bank-bills impossible. Some twenty or more years ago an officer of one of the most prominent bank-note engraving companies consulted me concerning this matter. I suggested to them that they prepare a flat white paper disk or board divided off into squares, say of one inch each, and have them painted in water color in all the varying tints of the primary colors; this to be photographed and the true monochromatic value established of the colors. Of course, the reds and yellows, their modifications, mixtures, and gradations, came out dark in varying tints from black to light gray; the blues, violets, etc., in light tints extending to pure white. With this result before them I suggested that before printing from their engraved bank-note or bond plates they print from a fine 'engine work' plate in large letters upon the bond paper a deep orange or green—or some other dark non-actinic (non-chemical) color—the word 'counterfeit,' 'reproduced,' or 'copy.' This experiment was tried on a closely engraved bank-bill which had been made for some South American State or company. The word 'counterfeit' was printed as above in yellow. Upon that tint the successive printings from the bank-note plates were made as usual. In an ordinary examination of the bill there is no indication of the word which had been printed on it in the first instance; but when exposed to the camera the word 'counterfeit' came out very strong. The letters had been made fully an inch and a half in height, and the word extended almost the entire length of the bill.

"This being so, there is no reason why

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our Government should not protect itself absolutely in this way from all possibilities of the most skilful photographic counterfeiter. I have often wondered why the direct invitation of the Bank of England notes was not accepted by the skilful and scientific rogues among the counterfeiters. As is well known, they are printed with simply black ink upon almost white paper, and could be reproduced by photography with comparative ease. Possibly the severe penalty that the English Government imposes upon such acts may have kept them in a degree secure. Our new one-dollar notes are also a grave danger in this respect. Of course, the point will be raised by some versed in the possibilities of color sensitive photography that with properly prepared plates the colors suggested as the basis for the word 'counterfeit,' or whatever other detective word to be printed, may be neutralized, and thus the above suggested scheme would be void. Such is not the case. Plates prepared to neutralize the detective colors would fail to copy various color marks that have been adopted in the registering or numbering department of our Government printers.

"I feel confident that if the scheme I proposed years ago be now adopted by the bank-note companies and our own Government the counterfeiters would find their occupation gone.

"GEORGE G. ROCKWOOD."

ON RETOUCHING.

BY AN ENGLISH RETOUCHER.

RETOUCHING and retouchers are, in my opinion, at a very low ebb; comparing the work done and the prices paid in former years with recent work and prices, I am sure there is a falling off. Even fifteen years ago, in a West End studio where I was employed, a piece-work retoucher we gave negatives to was paid $1.25 to $1.75 for cabinet heads. They were beautifully retouched, preserving the texture of the skin, without that billiard or nutmeg-grater effect now so common. I have not seen any negatives so well done for many years. The retoucher told me he could do four cabinet heads a day, thus his earnings were $25 or $30 per week. I doubt if any retoucher earns as much nowadays, and I am also doubtful if there is a retoucher who could produce work of the same quality. The man I refer to was an artist in every respect, taking extraordinary pains to perfect his retouching.

His strong point was the anatomy of the face, which he insisted upon as the basis of all good retouching. He would take a pencil and draw all the chief muscles of the face, explaining their position to make a certain expression, and how they moved in laughter, frowning, etc. His retouching was not a mere mask put over the face, but a working on the muscles under the skin to produce an external effect. This is precisely the method of painters, who, when painting a hand, put in the veins and muscles first, and then paint over a thin semi-transparent color for the skin. The result is a hand that looks like flesh and blood instead of a solid, waxy substance. In retouching a similar method gives the same natural effect, which cannot be preserved by the most careful work on the surface. I believe this working on the muscles is the secret of artistic retouching. It was always insisted upon twenty years ago, though I have not heard it mentioned for many years, and I put down its neglect as one of the causes in the decline of retouching.

Another thing my retoucher recommended was drawing and shading from the cast. He was an excellent draughtsman himself, and I have seen him take some charcoal and chalk and draw a life-size head on a paper as a negative, untouched, and then retouch it. I tried this myself, and I have seen others try it, and I can tell you that to do it well a man must be a good retoucher and an expert draughtsman. This command of drawing enabled him to work in backgrounds, drapery, and other detail; and, though I never tested him, I believe if given a fogged plate he could make from it by knife and

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brush-work a fairly decent negative of any subject. To reach this degree of skill shows that much study and training had been gone through, considerably more, I fancy, than present-day retouchers undertake or think necessary. The ability of the retoucher I have referred to proves to me that the study of anatomy and training in drawing are absolutely necessary for high-class retouching, and their neglect by retouchers accounts for the lowering of the standard of work and the fall in prices paid.

From $1.75 to 25 cents for retouching cabinet heads is a big drop, and it cannot be questioned that the lady retoucher has been the main cause of this fall in price. In the old days the retouching was done entirely by men, and they were paid on a scale similar to operators. When women took up retouching wages began to drop, as they always do when male is supplanted by female labor. The status of the lady retoucher also went down, since instead of being on an equality with the operator she is now regarded as inferior to the printer. This fall in wages and standing is the result of the mechanical teaching of retouching in so many lessons, on which system the majority of lady retouchers have acquired their knowledge of the art. The lesson method takes no account of the anatomy of the face, nor of the all-importance of the art of drawing, and without these the highest skill can never be attained. Whatever occupation women follow they rarely enter into it so deeply nor with the earnestness of men, and, in consequence, seldom reach to the same level of excellence. The best retouchers are still men, and it is only the existence of their women competitors which prevents them from obtaining the old rate of wages. Employers are well aware that the lady retoucher is inferior, yet are satisfied because her work suits them at the price paid, the consequence being a general lowering of the quality of retouching.

Before becoming a retoucher a man must have some practical knowledge of printing, developing, and other photographic processes, yet a total ignorance on these matters is common among retouchers. They know little of the printing qualities of a negative, and still less of the limitations of the lens and camera. If their retouching prints coarse, it is blamed on the printer; if the pencil will not bite, it is always the operator, who has changed his negatives, put grease on them, or something equally absurd. I have heard some ridiculous excuses from retouchers when their work is bad in attempting to fix the blame on the printer or operator. Without some knowledge of printing and development it is hardly possible to become an expert retoucher, and, according to my observation, the printer makes one of the best of retouchers. Negatives are always much improved by judicious brush-work on the back, and unless the retoucher can estimate the printing value of the colors applied the result is not likely to be successful.

Many retouchers undervalue the importance of spotting negatives, thinking it sufficient to daub on a lump of Indian-ink to give a white spot in the print. This is a modern idea; in the old days spotting negatives meant to color or shade the holes so that in the print they could not be distinguished. This was usually done with gamboge or crimson lake, the object being to diminish, and not increase, the spotting on the print. I have seen it done with blue paint, though it is more difficult with this color to hit on the right shade. Much can be done on the film with a brush and color, more particularly in taking out objectionable details in the dress, backgrounds, and furniture, and an ability to make such corrections will be much appreciated by employers.

I am of the opinion that the next few years will see an important change in the fashion of retouching, a return being made to the style of work put on the wet collodion plate. This had very little of the stipple about it, which came into use with the introduction of the dry plate. The aim in those early days was to remove the blemishes, improve the appearance, while retaining the likeness and preserving the texture of the skin. Retouching then was certainly more artistic and quite different from the smooth, waxy style which is at present followed. This mechanical system is becoming discredited; it is being recognized that the finest quality of retouching requires brains as well as lead-pencil for its execution. In time I hope to see the status of retouchers raised again by this agency. —*Photographic Chronicle.*

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The Origin of the Silhouette. The word comes from Etienne de Silhouette, an eighteenth century Minister of Finance in France. The thing is of Parisian origin. How the word came to be associated with the thing is thus explained: In the year 1750 a man started in Paris what he called Chinese shadows, an exhibition which consisted in throwing upon a sheet the black outlines of an object and making these objects perform a play. At that time the finances of the country were very low, and in the same year, Silhouette, a noted banker, was called upon to take hold of them and bolster them up. He did take hold, but failed to accomplish the ends expected by the people, the failure resulting largely through a scheme in which M. de Silhouette was greatly interested, and upon which he had published a book, entitled *A General Idea for the Government of the Chinese.* The popularity of the Chinese shadows caused the waggish to assert that the Minister of Finance was publishing his book as an advertisement for the shadows. The show was called Silhouette in derision, and the name was subsequently transferred to the shadow-like portraits which grew out of the show, and which had an especial vogue during the latter part of the eighteenth and the beginning of the nineteenth centuries. *Webster's Dictionary* asserts that the portraits were named after the Minister of France because it was his great diversion to make portraits of this sort on the walls of his apartments. But Webster is in error.

Enamelling Collodio-chloride Prints. Collodio-chloride prints are enamelled in the same way as albumen prints. Glasses are cleaned and coated with enamel collodion, which is allowed to set and dry. A coated glass and a print are immersed in a dish containing a hot solution of gelatine. The glass and print are drawn out with their faces in contact, and lightly squeegeed together; when the gelatine is quite dry a sharp knife is run round the edges, and the print is stripped.

There is no satisfactory substitute for collodion. The difficulty of coating the glass is a trifling one, and easily overcome. In all processes it is better to acquire a workman-like dexterity of manipulation than to hunt about for tenth-rate methods of evading the difficulty.

Take the plate in the left hand, and support one side upon the tip of the forefinger, and the end upon the tip of the second finger; the tip of the thumb will now rest upon the corner and balance the plate.

Near to the far end of the plate pour a pretty large pool of the collodion, gently lower the far end of the plate to allow the collodion to flow to the corner diagonally opposite the thumb, and without a stop lower the left-hand far corner; then raise the far end, and allow the collodion to flow toward the thumb; as it does so lower the right-hand near corner and drain the surplus into a bottle, rocking the plate gently from side to side, but without altering the plane in which it lies. If the pool of collodion has been large enough, and the plate has been gradually tilted to each corner in succession, the whole plate will be evenly coated without streaks or markings. A pneumatic holder attached to the centre of the underside will facilitate matters. The operation is difficult to describe, but easily learned in practice.

Blocking Out Skies. For the purpose of printing in clouds it is often necessary to block out sky from the negative. To do this well, prepare a thick Indian-ink mixture by rubbing a stick of Indian-ink in a little water until the whole is opaque when tested on a bit of clear glass. Grind in a little orange-chrome to make the mixture non-actinic. Now apply this preparation to the film side of the negative with a fine sable brush. The surface of the film should be free from grease, or the Indian-ink will not flow freely. To ensure absence from grease dip negative in alcohol and dry before blocking out. If any mistakes are made in applying ink, a slightly-damped sable brush or bit of rag stretched over a finely-pointed stick will easily remove the color. If many prints are to be taken, allow ink to get thoroughly dry and then varnish with good spirit varnish, otherwise fragments of ink will adhere to the prints.

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NOTES ON SNOW PHOTOGRAPHY.

THE really successful photographers of snow might almost be counted on the fingers of one hand. There are several reasons for the dismal failures that are so common, and perhaps the most important one is the tendency to take snow pictures on dull days. Such pictures usually suggest snow after a few days of very gradual thaw, when the first whiteness of surface is spoilt by a tinge of dirt and by the innumerable little marks with which its surface is pitted.

The plate should be backed. The minutest delicacies of the highest lights will be lost in the development of an unbacked plate. And the plates should be fresh from the makers. Plates—especially very rapid ones—sometimes deteriorate with age, and though this is not sufficient to be noticed with any normal subject it may be the cause of the unexplained grayness of some snow scenes. Another fault of snow pictures is over-exposure. The rule as to exposing for the shadows does not hold good here, and especially if the sun is shining. The making of a successful snow picture is not, usually, in the delicacy and transparency in the shadows so much as in the delicate gradation in the lights. A not too long exposure will, too, better give the dark gray sky which is so characteristic with snow.

The snow photographer must be an enthusiast. The snow-covered ground is often with us for several months of the year, and offers a sufficiency of opportunity. But the many varieties of snow-laden trees, frosted bushes, etc., may occur but once or twice in the season. And when they do occur in perfection they are more likely to drive the poor photographer to despair than to encourage him to expose. When a heavy thaw, snow loads every limb, bend the younger saplings like hoops, and snapping off dead branches; and when the sky afterward clears and the sun glints through the branches, then is the time for success—or great failure. When the snow melts under the sun and freezes again into crystal sheaths as it trickles down the trunks, when every twig is ice coated and flashing under the sun and against the blue sky, then is the time for despair.

The photographer should not have to seek for his tree scenes—at their best they are too evanescent to allow of much hunting. The ground should be well known beforehand and the photographer, when snow has been falling during the night, should be up and out betimes. Before he sets out let him screw his lens into his camera—if carried in his pocket he will pass tedious moments before it steams and clears again.

The developer for these views must not be too cold, or the prolonged development may lead to fog, and this must be avoided at all risks. A "perfect" negative is an essential to the best results, and this can only be obtained by corrected procedure at every stage. It is through some error at one or other parts of the work that the average snow picture attains its commonplaceness—as we see it in the average amateur production.

THE MAN OUT OF PLACE.

BY W. H. M.

"THE poor ye have always with you," and if the photographer has not more than his share of poor relations, at least that share is very much in evidence.

We admire the successful man, go to him for our work, laud him at the conventions. How about the man in the very small town, who has few busy times and many slack ones; who never gets a dollar fortuitously, but always by hard work, but who too often sees some unexpected snag which may shatter his season's hopes and drain his hardly gathered resources. He has a sense of his limitations, knows that

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life will be one round of struggle, and that he has slim chance of ever getting ahead either financially or in prestige. He has not even the hope of "growing up with the country" that buoys so many. Let a boom strike a town, and the miller, the grocer and the farmers all seem to rake in the cash. But somehow, from the photographer's point of view, as soon as there is the slightest chance of a sufficiency for one, along comes some other man, and two take a bite at the one ripening cherry.

It is necessary and inevitable that we should have many privates and few colonels in the grand army of the fraternity; nobody worries about that. But what *does* worry so many is the fact that a number of their "poorer brethren" are not merely men in moderate circumstances—they are men in straitened circumstances. This is not the fault of a choice of profession or trade. There are failures in abundance among the more commercial of his neighbors, and there is distressful poverty sometimes in the home of the schoolmaster or the minister. The profession is all right, and its possibilities are continually enlarging. Everybody believes this now, although ten years ago we were all asking ourselves whether photography was a played-out game.

The unsuccessful photographer may assure himself that he has mistaken his calling, but that does not help matters. Finding a theory does not rid him of the condition; and he is up against it—hard. There is no universal royal road to success, but to the great mass of men the good old-fashioned road is open—the road of solid hard work. The photographer must set his mind to work, first to increase his turnover—certainly by means of more business and, if possible, by means of better prices. He must not wait for work to come to him; he must hunt after the work.

How? There are many ways, and I will give a few, which I have seen used by men in this district. If he wants more ideas he will get them in bulk if he likes to run through his numbers of the MAGAZINE for the last four or five years. A night or two ago I spent in turning over the pages of the MAGAZINE, and was struck by the evident sympathy which the editor has with the struggling man. It seems to be a mission with him. Page after page describing some specialty or urging some action, all to encourage greater effort. Would that the lessons were more often profited by.

The photographer must hunt after the work—he must advertise. Now one of the commonest ways of advertising is through printer's ink, and so I will treat of this first. I will not tell how to draw up a circular or how to word a newspaper ad. because this has already been well done by other writers in these pages.*

Printed advertising can easily swallow much money, and sometimes without a cent of return. The end of advertising is not to get the facts in print, but to get the facts seen in the proper quarter. The local newspaper will insert an advertisement for three months and will print 1000 circulars at a reasonable rate. The editor is not in business for his health, and yet you can probably arrange a part trade with him. Call and see him, and he or his family may give you a sitting for part pay. He never thought of coming to be photographed—he's busy, and your name has not been worrying him any, but now that he can get it done without paying the cash—and perhaps with a dollar or two in his favor, the odds are he will come. If so, make friends with him and get him to make some mention that you have taken his photograph. That will appear in the reading part of the paper and be seen by those who skip the ads. When you get your circulars (which should have been well thought out as to the words) see that one goes into every house in the place. When your advertisement runs out at the end of three months it will be hard luck if you have not made a few extra negatives on the strength of it, enough to pay for a repeat of it and of the circular effort. Advertising need not be expensive. Of course, two dollars will bring in more returns than one, if both sums are laid out equally well. But advertising *should* be steady. So repeat the circular effort at the end of three months, and again—and again.

There is money to be made by an intelligent anticipation of events, or watching

* See "Advertising Suggestions," January, 1899, and the papers on "Advertising" now appearing.

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of events. If a man invests in a new horse and buggy, he's very likely proud of it. Write him, or see him and suggest that he be photographed with his new rig. A good percentage of these attempts will prove successful, and where no order comes of it, be assured that your name will be favorably remembered so that the effort may bear fruit in the future. The church minister often changes every year or two, and there ought to be a few dollars in photographs of him and his church. People are always being married. Cannot you at least get an order for a 5 x 7½ group? I know a little town with one resident photographer. Every year a man comes five miles and takes a photograph "on spec." of the classes at the school. There are three classes. He photographs them separately, on a 5 x 7½, mounts on a large mount and sells the pictures for 25 cents each. There is not much in it perhaps, and yet it pays a man to come from the next town. He is not as sleepy as the man on the spot.

This business of photography outside the studio—business which must be *made*—will make the difference sometimes between comfort and starvation. Learn to photograph a house, inside as well as out, and don't be afraid of pushing business. A snowball gets nowhere when it is left alone, but when pushed along it takes up weight at an alarming rate.

The photographer should do all in his power to let his studio be attractive. If he has a show window, let it be clean and well arranged and often re-set. Would it not be possible to obtain the loan of a few pictures from some better known and more successful man—say some officer of the State Association who has had his pictures framed for the convention? Get a little exhibition together, and when it is there advertise it so that the people come to it. There is an unfortunate tendency for people who can afford it to go away from home for their photographs. They have a theory that the bigger the city the better the work. A few years ago when I visited New York a well-known photographer told me that he had quite an extensive business with people who lived up State—anywhere between Albany and Buffalo. Now in that section of the country you can obtain photographs equal to anything in New York, and yet the folks persist in going to the larger place to the detriment of their own townsfolk. This is not as it should be. There is in every place a better class of trade, small, no doubt, but a paying trade, and one which the photographer cannot afford to let slip. The photographer should at least be able to do justice to a good printing paper. Many photographers who use aristo paper have no notion of how to get at all the beauty there is in it. He should learn to work platinum paper; he may even invest in the few necessaries and the much care required for successful carbon printing. But by careful work and by the judicious introduction from time to time of new specialties he should make an effort to keep this trade at home.

There is one branch of work which every photographer ought to know, but which seems to be foreign to some of them. Bromide work, and especially bromide enlargements, if *well* done (nothing is worse than a badly made enlargement) should draw a steady little stream for birthday presents, or for remembrances of those who are dead. There is business in this line, and it will help toward the supplying of frames. However small a town may be there are at least a few amateurs who don't know how to handle their plates or films after exposure. This business, in spite of what some may say, is worth looking after. Some photographers still cling to the old objections to the amateur. But if they don't make money out of him the druggist next door will. The dealing with amateurs *may* lead to handling supplies—but that is a question I won't talk about.

All this seems to suggest a great deal of work, but it is only by a good deal of hustling that the photographer in the small place can do more than get a bare living. If he objects to hustling, he can of course vegetate in respectable semi-starvation. But he cannot reasonably complain until he has honestly worked every expedient.

What about the man who tries all this, and succeeds as many have done? Must he move to a larger town; should he go to some great city? Such a step is a serious one, and should have a good many pipes smoked over it. Let him first join

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the State Convention and see what he can do there. But the man who makes himself so strong in a small place that he can laugh at competition is often better off than the man who boldly challenges the anxieties of a large city.

THE FIGURE IN PORTRAITURE.

BY "OPERATOR."

THERE has been a natural revulsion in the past against the full length figure in photography. The inevitable turn of fashion is in itself sufficient to account for this, but additional impetus was given by the fact that the figure, as usually portrayed, was wofully archaic and somewhat wooden. It seems equally certain that there will in the near future be a similar change *toward* the figure. Our professional photography has made real advances during the past seven years, and yet it seems at times as though the effort toward art has been away from the first requirements of good portraiture. For in photographic portraiture the great thing is to obtain the expression of character of the sitter—the likeness not only of the features but also, to a certain extent, of the mind. And there has been so much striving after delicate or clear lightings and subtle modelling that the likeness tends to become in a measure subsidiary. The photograph is more interesting as a picture, to those unacquainted with the original, but the friends of the sitter have a secret feeling that this likeness might be better.

The bust portrait, in short, has been so overdone that the public begins to tire of it, and the photographer who comes to tempt with good full-length work will reap money. Not the full-length woodenness of nine or ten years ago, but the beautiful work such as we see in WILSON'S from the studio of Frank G. Schumacher, D. D. Spellman, and others. And the full length should be chosen not merely for the sake of novelty, but because with many persons character may be best expressed by full length. There are, of course, cases where the character is best rendered by the face alone, or sometimes by half or three-quarter length, bringing in the hands.

Looked back upon from say 1920, much of the work of the past few years will look as quaint as does the work of the 60's today. And among the much quaint work of thirty-five years ago, in which we admire technical quality and permanence of printing process, we find many delightful figures, carte-de-visite in size, and usually simple and dignified in pose, which are pleasing at any time. When we find an old print giving us this pleasure we may conclude that it has a touch of art, as distinct from either photography or fashion, and so may study it for some hints contained in it.

The movement toward "bust" photography was an admirable one, both from business and artistic points; but now that it has been overdone there is room for a discriminating movement in the other direction.

The successful treatment of a full length figure is not the easiest thing in the world. Photographers who doubt this should recall their attempts to do justice to a bride. What a bugbear that train so often is. With ladies full lengths are often necessary—it will not do to trim off an inch of a beautiful dress. With men it is often more satisfactory to take a half or three-quarter length. The few hints which I give may be useful to those who have few opportunities of seeing what others are doing in photography—though I hope such men are becoming fewer every year, for every year the facilities for attending some one or other convention are becoming greater.

To digress for a moment, figure photography has, in spite of what I have said in disparagement of "nine or ten years ago," an honorable past record. In Daguerre's day it was usual, I believe, to photograph the head in preference to full figure, but with the student of the carte-de-visite the figure came into prominence. There were, indeed, at first but two popular forms of carte, a full length and a small vignetted head. Many of these were pictures in the truest sense of the word, for the leading men of the early collodion days were often

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artists of the brush—many of them miniature painters—before learning photography. These men charged dollars per print, and made their work worth it by portraying their sitters at their best—exquisite often in pose and line. The downfall began when cheap men began offering cartes in dozens at a commercial rate. The *large* head on a carte-de-visite was unknown to the earlier portraitists, and came into being because some photographers had photographs of celebrities in larger sizes. The sale of these fell off when cartes came in, and the photographers hit on the ingenious expedient of printing the heads only from the larger negatives and selling them as cartes.

With the advent of "commercial" photography the full length fell on evil days. And the one principal evil was the question of pose. Photographers had one or two set ideas, and these were about as unalterable as the plush upholstered chair or the pillow. Who does not know that hideous pose, A. D. 1850, or thereabouts, a standing figure. One elbow or hand rests on the top of a pillar; the hand of the other arm rests on the hip; one leg upright carrying the weight, the other crossing it to make a printer's figure 4, and just resting the toe on the ground. Or there was the pose of a seated man directly facing the camera as though the buttons of his waistcoat formed a central line on which to equally balance the two sides of the picture. One open palm rested on a thigh; the elbow of the other arm rested on a small table, over the edge of which the hand hung limp. There are sufficient examples of the evils of set poses. It must be confessed that the average man of today is a little inclined to be symmetrical in his attire, but this only the more shows that the photographer need not emphasize this symmetry. And here is the secret of success—that "no pose" of which we have heard so much during the last two years. The pose must not be to a prearranged formula, but to the natural attitude of the man. Stand a man erect before the camera, and he stiffens both knees and straightens himself. Let him stand at unconscious ease, and one knee is relaxed, for a man when resting usually throws the bulk of his weight into one leg. Let the man—he is naturally sufficiently awkward—fall into his most comfortable attitude. To take him just as he is will be a less failure than to take him as a ramrod. But the photographer should have the eye to see where the faults of pose are, and to be able to suggest necessary slight alterations without going through a sort of rehearsal. For any handling of the model—turning the head, placing a hand in position, etc.—tends to render him unduly conscious and, therefore, stiff. There should be a measure of variety in the figure. Do not let the head and the hands form an isosceles triangle, and usually the head and the body should not face in exactly the same direction. If the figure is full front, the face may be three-quarter; but there must be no unnatural stiffness in the turn of the neck. And remember that it is seldom, in real life, that a man leans with his arm against a pillar or across the back of a chair. He may, indeed, lounge with his back against a wall, but such a pose will scarcely look dignified in portraiture.

When we turn from man to the great upholder of photography we meet a fresh and, in some respects, an easier problem. Man's dress is usually chosen primarily for utility, and when he does indulge any "pride of appearance" beyond the customary correctness of cut and general neatness, it is not in a direction which will help the camera. With woman it is different. Among her many missions the mission of being beautiful has an honorable position, and this applies not only to face and figure, but also to apparel. Indeed, many photographs are taken in order to record a handsome dress. There is a natural grace in every movement of some women, which almost prevents possibility of failure—at least as far as pose is concerned. It is difficult to give any dogmatic rules of pose. As an instance of this, note the words of a very able portraitist—the late H. P. Robinson: "A general rule might be given in very few words. Make your pose very simple, but avoid the 'front elevation' or 'profile section' effect, to do which you must get variety in the lines of the figure, but in so doing avoid the twists and contortions so much affected by some photographers." As a general statement this advice is good, but some of the most suc-

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cessful portraits of women have been in just the very poses which are here condemned. Considering that a woman's dress and figure offer such possibilities to the photographer, it is strange that we see so very many photographs which are spoilt by some easily avoidable and obvious defects. We usually court failure if we endeavor to get too much tense pose in the sitter, and achieve a measure of success if we can get a suggestion of motion or of some occupation. Man's occupation—photographically—seems to be limited to reading or smoking—few photographers are quite successful with the pipe or cigarette—but to the woman many slight actions seem open. She may play with her fan, or she may turn the leaves of a book, or pull on her glove, or gather her dress in one hand, as though in the act of turning. A score of little suggestions of arrested motion are possible; or many restful poses are possible. Let the pose be founded on a natural—and, if possible, characteristic—attitude, and do not let it be too strained. This subject is too long and important to be treated here more fully than in this suggestive manner. To handle it fully would require a book.

With the woman we must class girls of twelve or thirteen or upward. In taking these "young women" a full length is often better than three-quarter length in that the length of the dress is often a good guide to the age. In the photographing of children we are all agreed as to the desirability of a minimum of pose. To quote again: "There can be very little posing of a young child; you must do, not what you would, but what the child will allow." Happy is the photographer who has learnt this lesson and to whom the child will reveal himself in his fullest winsomeness, without attempt at pose.

VELOX.

BY W. E. A. DRINKWATER.

PART I.

During the summer months such a process as Velox printing is, naturally, overlooked by the majority of photographers. In fact, all spare time is usually occupied in negative-making rather than printing, with just an occasional rough proof made on print-out paper in the quick summer light. But the advent of shorter days and longer evenings makes one look around for a quick, clean, effective, adaptable and permanent method of making use of the negatives which constitute our summer haul. It may not be out of place to call attention to Velox paper as a printing process which fulfils all these requirements.

As to *speed*, it occupies a place somewhat on the level with bromide paper, without its great drawback—confinement in a stuffy, dark room. While the exposures themselves are somewhat longer with Velox than with bromide papers, the development is so much more rapid that the time lost in one direction is gained in the other, especially when advantage is taken of the power of developing one print while another is exposing, and in the same bright light, too—not an unimportant item when comfort is considered. In fact, taking all things into account, to an individual working single-handed, Velox is, probably, even speedier than bromide paper, and thus easily takes first place of all processes for rapidity of print production; hence it is peculiarly *the* process for the amateur busy during the day and following his lonely hobby during the evenings.

Cleanliness and Velox printing may be almost said to be synonymous terms. A dirty, sloppy worker will not get good results by this means, and the whole process is so clean in its method that one may safely turn up the table cloth in the dining-room and conduct all operations (prior to the final washing) there without fear of rebuke from the lady of the house. Rather will she be pleased that she can have your company and conversation instead of having a lonely, mopy evening, varied only by occasional distant grumblings from the dark room under the stairs.

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The *effectiveness* of Velox prints scarcely needs emphasizing. By ordinary exposure and development, a color is produced which somewhat resembles the results of bromide paper and platinotype, but with differences. There is an utter absence of that sunk-in appearance that is so frequently met with in platinotype, and, when compared with bromides, Velox prints have a snap about them that is peculiar to the process, and clear high lights without loss of shadow detail. This is, probably, due to the fact that Velox is not, as is commonly supposed, merely a slow variety of bromide paper, but is, in reality, a chlorobromide paper, and the results are distinctly richer throughout their gradations than in a pure bromide paper. For special effects, too, the manufacturers seem to have had an eye to every requirement that the photographer can think of. We can buy the paper with any surface we may desire—glossy, matt, half-matt and rough. Some of them are also coated on extra stout paper, so as to dispense with mounting, and even post-cards are obtainable ready prepared to enable one to fall in with the fashion of the moment.

Its *adaptability* is a point that is frequently forgotten. Amateur photographers, and even professionals, do not turn out negatives with machine-like regularity that are all just alike in printing power. Further than that, if they are striving for good and artistic results, they do not wish to do so, for the type of negative suitable to one class of subjects is utterly unsuited to another class. In print-out paper printing (with very few exceptions) there is not much scope for making bright prints from a slightly over-exposed and thin negative, and *vice versa*. The same may be said of all other processes, except, perhaps, carbon, and it is a question whether even that process gives much more range than is obtainable with the two grades of Velox. Even then it is only attained by a complete alteration of the sensitizing bath. If the cool, black color obtained by the ordinary method of using Velox is deemed unsuitable to the subject, the color is easily modified by subsequent toning, and (but this is in strict confidence) a print that is not a success as a black, but has an ugly tendency toward browny-green, will emerge from the toning bath able to hold up its head without shame among its purer (black) fellow-prints.

Permanence. This is the most debatable point. The manufacturers claim that Velox prints *are* permanent, and, looking carefully into the matter, there seems every reason to believe that the statement is correct, although time alone can conclusively prove it. To use the term in its absolute sense, of course, no prints on paper, by any process, are permanent, because the paper support is impermanent. The term can, therefore, only be used comparatively. It is usual to describe carbon and platinotype as the only permanent processes, and, if a claim can be established for Velox equal to that of the other two, it will be equally worthy of the term permanent. Have you ever seen a deteriorated carbon print? I have—scores of them. Theoretically, the image is composed of pure carbon in pure, insoluble gelatine, therefore quite unaffected by the ravages of time and atmosphere; but pure gelatine is a thing difficult to obtain, and, I repeat, I have seen scores of carbon prints which show a yellowing in the high lights, due to some probably unknown action in the gelatine or the paper support, and the same thing occurs (from a different cause) in some platinotypes. The captious critic says this is not fading of the image, which remains unimpaired. Granted, only please apply the same charitable argument when criticising a Velox print. Now, compare the three processes, supposing in each case a perfect print, conscientiously made. A platinotype is composed of pure platinum on, or in, pure paper; a carbon print, pure carbon in pure gelatine on pure paper; and a Velox print, pure silver in pure gelatine (much less of it, though, than in a carbon print) on pure paper. Taking all things into consideration, there is not much to choose between them, because, if platinum is in itself less amenable to alteration by the effects of atmosphere than is silver, the print, as a whole, has the compensating disadvantage that the paper itself has no protection whatever, as the slight arrowroot sizing is completely destroyed in the acid baths; and while pure carbon (if such is the ingredient forming the image of a carbon print) is a more

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stable material than the pure silver of a developed Velox print, there is also to be considered that there is a very large proportion of gelatine present to attract the noxious gases of the atmosphere, whereas the gelatine in a Velox print is only just sufficient to carry the molecules of silver and prevent them from tarnishing, being almost a mere sizing to the paper. Certainly, then, I should say that a properly-executed Velox print had just as long a lease of life as a carbon or platinotype made in the same conscientious way. From my own practical knowledge, I can say that I have made prints by both the so-called permanent processes which have lost their pristine purity in the course of a year or two (although not to any alarming extent), while I have never yet seen a print on Velox which was good in color and free from stain when first made which has since deteriorated.

In a further article I propose to deal with some of the chief points in the practical working of the paper.—*The Photographic News.*

(To be continued.)

ASSOCIATION NEWS.

The Photographers' Association of Wisconsin. The Executive Committee of this Association met at Milwaukee some weeks ago, and it was decided to hold the Sixth Annual Convention of the P. A. of W. at Milwaukee on March 11, 12, and 13, 1902, and that it shall be called the Wisconsin Educational Convention.

After careful deliberation it was unanimously decided that the Association shall offer no prizes, but shall make the education of its members the principal object of this convention.

In all conventions of the past he who returned to his work with the greatest amount of added knowledge, newest ideas, greatest enthusiasm and most earnest desire to make better pictures, has been the winner of the most valuable prize, regardless of medals or trophies won or lost. In this age of progress and the advancement of all the professions, education is the prime factor.

The Wisconsin Association has been, almost from its organization, one of the leading State associations, and it will be our pride to keep well to the front and make our sixth annual convention the best ever held by each member sending in some of his best work for comparison with that of his fellow craftsmen.

There will be one class especially for public criticism, and those wishing their work to be hung in this class should mark their application and exhibit "Criticism Class." Work in the general exhibit will not be publicly criticised except with the consent of the exhibitor. Pictures may be framed or sent without frames, but are preferred in frames without glass. Pictures may be any size, to suit the taste of the exhibitor. All exhibits must be in the hands of the Committee on Exhibits by March 8th, at 5 P. M. Those received later may not be given space. Start them on time, and they will be received on time and get proper attention.

It is the intention of the Executive Committee to have complimentary exhibits from some of the leading photographers of America.

Communications should be addressed to the Secretary, J. W. Bandtel, 1103 Cherry street, Milwaukee.

The Photographers' Association of Kansas has elected its officers for the year as follows:

President, G. A. Streeter, Junction City.

First Vice-President, F. A. Loomis, Emporia.

Second Vice-President, G. F. Dresser, Winfield.

Secretary, S. Hirst, Leavenworth.

Treasurer, P. H. Bauer, Leavenworth.

The New England Convention is fixed to be held at Copley Hall, Boston, August 20th, 21st and 22d. President Charles W. Hearn has given us advance news of many most interesting features in preparation, but we are not yet permitted to divulge the details. The New England Association is in splendid condition financially

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and otherwise, and we can safely promise those who attend the convention a profitable and enjoyable time.

The recent mid-winter dinner of the association, held January 17th, was a brilliant affair, over one hundred photographers being present.

The Pacific Northwest Association at its recent convention elected the following officers:

President, A. L. Jackson, Tacoma, Wash.

First Vice-President, A. D. Rogers, Olympia, Wash.

Secretary and Treasurer, C. F. Plummer, Seattle, Wash.

Vice-President for the State of Washington, E. L. Myers, Seattle, Wash.

Vice-President for the State of Idaho, Henry Erickson, Moscow, Idaho.

Vice-President for the State of Oregon, Charles Butterworth, Portland, Oregon.

Tacoma, Wash., was selected as the location for the convention of 1902.

The Virginia and North Carolina Association has elected the following board of officers for 1902, selecting Danville, Va., as the place for the next convention. The date for the latter has not yet been fixed:

President, C. P. Wharton, Raleigh, N.C.

First Vice-President, C. E. Cheyne, Hampton, Va.

Second Vice-President, S. L. Alderman, Greenburg, N. C.

Third Vice-President, A. Homier, Richmond, Va.

Secretary, C. W. Enstler, Danville, Va.

Assistant Secretary, Walter Holliday, Durham, N. C.

Treasurer, R. W. Holsinger, Charlottesville, Va.

The Photographers' Association of Texas selected San Antonio as the location of the 1902 convention, and has appointed its officers as follows:

President, Frank Leffler, Fort Worth.

First Vice-President, Mr. Brock, San Antonio.

Second Vice-President, A. H. Blanchard, Hillsboro.

Third Vice-President, L. T. Powell, Beeville.

Secretary, M. L. Sanders, Waco.

Treasurer, Bert Williams, Denton.

The convention date is not yet fixed.

NATURAL COLOR PHOTOGRAPHY.

BY E. SANGER SHEPHERD.

[We have not published any considerable amount of reading matter bearing on color photography of late. The cause is simple. There has not been any development of unusual interest in that branch of photographic work. The lecture reprinted below, given before the London Camera Club, seems to warrant the space it requires, as giving a profitable summary of the results achieved by Mr. Sanger Shepherd in his practical method. The appliances and materials requisite for this process are obtainable in the English market, and we hope will be introduced on this side in due time. Meanwhile the new Carbutt polychromatic plate and color filter system provides a ready means of obtaining the color records necessary.—Ed. W. P. M.]

I want to explain, to some extent rather fully, the theory and basis upon which the photography of color depends. This afternoon I went to Gray's Inn to pick out a number of slides to show here to-night. Mr. F. Seyton Scott looked through those I had selected, with the result that (owing to the very great respect I have of Mr. Scott's opinion) a large number of those slides have been eliminated.

Color photography has now become a practical thing, and Mr. Scott thought that I should show you what other people have done rather than what I have done. Various companies have been started in connection with color photography, and among those that remain only two are worth our consideration. One is the very beautiful process based upon interference, that of

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Professor Lippmann, of which a few examples only are extant. *The* practical process of color photography is derived from the *Helmholtz theory of trichromatic vision.* It proceeds upon the assumption that color sensation in the eye is produced by mixtures of three colors of the spectrum, a bright red, a bright green, and a bright blue-violet, and, therefore, aims to secure the record of the colors of the objects photographed by taking photographs through three-colored screens. Our president, Sir William Abney, has completed, within the last two years, the graduation, very carefully, of the spectrum in terms of luminosity, and Sir William's paper on the subject of color sensations and the principles of luminosity is to be found in the "Proceedings of the Royal Society." By devices worked out by Captain Abney we are now able to produce screens which yield three negatives corresponding to the three sensations. From these three negatives we make three prints which are printed in colors complementary to the primary colors, which, when mixed, form white light. [Slide.] Here we have a test object giving red, green, blue, yellow, black, and three monochromatic pictures, taken respectively through the red filter, the green filter, and the violet filter. In using the Cadett spectrum plate there would be a deep orange-red filter, a yellowish-green, and a good blue from the blue-violet. With the Edwards plate these screens would be a deep red, a bright blue-green, and a deep blue-violet.

To come to the practical part of the process, the easiest way to get these negatives is by a device similar to the one I have here. Attached to this quarter-plate camera we have a repeating back which is furnished with a little panel corresponding to the dark slide. The repeating back is furnished with a little focusing screen. The three-color filters are fitted in the frame which is attached to the dark slide by lugs at the end. The dark slides and the color filter move together. When light passes through the thickness of glass the focus is slightly shortened.

When you have focused upon the green glass screen—having focused exactly as in the ordinary way—you place in this set of color filters, the double dark slide being charged with plates; the Cadett spectrum is the most sensitive to all the colors of the spectrum. Dry plates are inserted in the dark slide in the ordinary way, and you make the first exposure through the red screen. On sliding this back you get the green filter in place and take a record of the green parts of the subject, and by sliding still further you get the blue filter opposite the lens and take a record of the blue-violet part of the subject. We get then three negatives which are practically perfect—like those of the object—but they vary in density according to the colors of the objects photographed.

The next series of three slides (exhibiting) are of a very simple subject—one of Mellin's posters. This (showing) is a negative taken through the blue-violet filter. You will notice that the bricks are white, the children's dresses are both white, and the background at the top is opaque. The next slide will be the negative taken through the green filter. There you see the dresses—one is opaque and the other transparent, the bricks are opaque and the background is transparent. The next is a negative taken through the red filter—here the background is transparent, the bricks are opaque, and both dresses are opaque. In this positive print taken through the red negative both dresses are transparent and the bricks are transparent—it is printed in greenish-blue—a minus red print.

This is a green negative, and is printed in minus green; that is to say, a pigment which contains both blue and red in the proper proportions. This negative taken through the blue-violet filter is printed in minus blue or yellow, the color which transmits or reflects red and green. If we superpose these three prints we get the reproduction of the original. Before showing you a number of these prints I want to mention one or two things about the making of the color prints. Obviously the simplest method would be a colorless carbon print from each of the three negatives—all three on one plate, measuring 8 x 3⅓ inches. We can cut them up with scissors and stain them with dyes. There are, however, two objections to that method of procedure. First, the prints would be separated by two thicknesses of celluloid, which in actual making up would seriously impair the defi-

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nition, because the blue-green print would not be as sharp as a silver image. It is found that a blue-violet negative almost always holds the detail of the picture. Very few subjects are suitable for treatment by the carbon process, therefore we make a print from the red filter negative by replacing the silver in an ordinary lantern slide by an iron salt just of the correct shade. This is developed in the ordinary way, and we get a black image as usual for a lantern slide. This is placed in solution which approximates to Prussian blue or Turnbull's blue, but the compound of Turnbull's blue and Prussian blue will cut out both the green and the red end of the spectrum. We are thus able to get what we require—a transparent blue image which stops out the red and leaves the green and blue. These prints from the filters through the green and blue-violet are made together upon a strip of film coated with a gelatino-bromide emulsion. This was formerly sent out in an unsensitized condition ; the film, however, is now sent out ready for use—it is sensitized with a bichromate salt.

These tissues require to be transferred, but you can avoid all anxiety about the transferring by accurate time exposure, which is easily accomplished by the help of an actinometer. You then get a relief in gelatine corresponding to the two negatives. This relief is easily visible because of the bromide of silver in the emulsion ; bromide of silver enables the image to be readily seen, and it prevents the light from striking through the thickness of gelatine. After printing and developing, the tissue is immersed in ordinary hypo solution, and you get a colorless relief in gelatine. This relief is then dipped in the pink and yellow solutions, and we now have three colored positives ; these are superposed, and we get the finished results. There is no reason why an amateur should not get satisfactory results at once.

The glass positive that we print on an ordinary lantern plate we get with a reversed image, and as the other two images are printed through the film we take a yellow print and place that on the green-blue print, so that the two films shall be in actual contact. If we place these two together the three prints are separated by only one thickness of celluloid, which amounts to nothing in the lantern, so that the three prints are capable of giving the finest detail which can be obtained from negatives.

The next slide shows a diagram of the three primary colors, as in Mr. Ives' process. If we mix green, red, and blue light we get white. In my own process we are working from white to black. This diagram represents what happens—where all three overlap (in the centre) we get white light.

[Slide.] Here we have blue-green, pink, and yellow, where the blue and green overlap we get blue-violet, where the blue, green, and yellow overlap we get blue-green, where the pink and yellow overlap we get red, whereas in the centre, where all three overlap, we get black. Three films are superposed, and it would seem a question of making the sum by addition or subtraction. The lecturer then showed a number of colored lantern slides, including a picture of the swfft moth, a picture of poppies in a Japanese jar being a slide made by Mr. Andrew Pringle, an object of stained glass made by Mr. Howdill, of Leeds, effect of polarized light, sunset tints, and an oil painting. In reference to a slide entitled "Guiana," he said : Some months ago Professor Meldola said he had to give a lecture on mimetic insects, and wanted a lot of slides for illustration. This slide, which is one of the series, represents in the first row butterflies ; in the second row, moths. There is a great similarity in the color of these insects. In some of them that I photographed wasps and harmless beetles, which imitated the wasp, are shown side by side. The insects that imitated the wasp were protected, and multiplied rapidly. To bring out such facts of natural history is one of the practical uses of color photography.

After exhibiting and describing a large number of slides the lecturer continued : So far we have only considered the taking of negatives by a repeating back. Many people feel it would be a great convenience to take all three photographs at once. Some fifteen months ago I patented a method of overcoming this difficulty, which I thought would prove effectual. For various reasons I let this patent rest for twelve months before doing anything with it, and

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I am now preparing to put this into practice. What we want to do is to obtain three sets of negatives practically simultaneously, so that if a body should move during exposure the movement should be represented in all three pictures. This is accomplished by the use of a reciprocating mirror. We arrange three plates on three sides of a square, one on each side, and we wish to divert the images some three or four times a second. If now we have a mirror on each of three angle plates properly arranged upon this reciprocating bar the image would be diverted by one mirror to the right-hand side. At the bottom is another mirror, which would divert the image to this side. Fortunately this camera could be made quite easily, and great expense is thus obviated. (Loud cheers.)

DISCUSSION.

The Chairman: I am sure we have all listened to Mr. Shepherd's lecture, and there must be among you some who would like to make remarks.

Mr. Smith-Williams: I understood that each color-filter required a different length of exposure. How would you get over that in turning from one thing to another?

Mr. Shepherd: It is got over by a difference in the aperture of the opening which comes successively opposite to each portion of the lens; practically you use three stops. In taking a picture with the repeating back you might give ten seconds through the red filter, five seconds through the green, and three seconds through the blue. In the reciprocating mirror that is done once for all by altering the aperture of the diaphragm.

Captain Hills, R.E.: Is the relation between the three exposures exactly the same always, so that when the adjustment is made that relation is permanently good for all sorts of lights?

Mr. Shepherd: The relative exposure for daylight while using the same batch of plates might remain the same for many months together—a new batch might be more or less sensitive to red. It is very customary with workers to make a ratio negative by making a white object—preferably a crumpled sheet of white blotting paper; a white object must be represented in all three negatives with equal density.

Mr. Inwards, F.R.Met.S.: Have you tried the rainbow?

Mr. Shepherd: I have two or three negatives of a rainbow, three I think, which are quite satisfactory. (Cheers.)

The Chairman: I think you will agree with me that we have had an extremely interesting lecture. I think, considering the state of the weather, Mr. Shepherd may congratulate himself on the audience he has had. The time is coming when amateurs will take up color photography largely. In monochrome we cannot represent color contrasts—here we have only the bare bones of nature. Color photography has a grand future. Very few of you, I dare say, have any idea of the extreme care necessary in making the light filters. I have done a good deal of work in conjunction with Mr. Sanger Shepherd with regard to the measurement of the luminosities of light filters, in which we have to follow the curves of the color sensations, and to do that is a very difficult thing to do indeed. The Sanger Shepherd process is elastic—if you have a fancy for favoring the reds, or the blues, or the greens, you can do so—you have only to stain one film more than another. If you want to represent *exactly* what you saw then you must go for great exactitude of work. An amateur can produce very excellent lantern slides in color. I am sure you will all join with me in a vote of thanks to Mr. Sanger Shepherd for his most admirable lecture.

The proceedings terminated with a cordial vote of thanks to the lecturer.—*Camera Club Journal.*

Blocking Out. There are several opaque substances especially manufactured for the use of those who wish to block out parts of a negative, but there is nothing to beat the cheap stick of Indian-ink, such as can be bought for 5 cents. Painted onto the gelatine with a fine brush, it will, unless the film be greasy, answer perfectly. If the ink runs at all, as it may do if the film has been fingered, or even printed from, the negative should be lightly rubbed with a tuft of cotton just moistened with wood alcohol.

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THE ARTS OF ENGRAVING.*

BY R. J. CRAIG ANNAN.

It is frequently found that it is the commonest things in life regarding which we have the least definite knowledge. The constant familiarity with them prevents us inquiring into the why and wherefore of their being, and I venture to think that the various methods of engraving are less generally understood than are the processes employed in the practice of the other graphic arts, in spite of the fact that engravings are much more frequently brought under our notice than either drawings or paintings.

We can all recognize readily an oil painting, and would not confuse it with a water-color drawing; but in discussing prints with genuine art-loving people I find comparatively few who can discriminate between an etched and an engraved plate, or who could tell, for example, to what class of engraving the print now upon the screen belongs. You will recognize it as a work by Albert Durer, and you can readily appreciate the power of the composition, the characteristic strength of the drawing, and the exquisite sentiment conveyed by it; but my object this evening is to endeavor to show you that there are other points of interest and peculiar beauties inherent in each kind of engraving, to appreciate which it is necessary that the observer should have some elementary knowledge of the method by which each has been produced.

As I have said, you all know the essential difference between an oil painting and a water-color drawing, and would never dream of looking for the qualities in the one which you would naturally expect to find in the other; but it is quite a frequent occurrence to hear a pen-and-ink drawing spoken of as an etching, which is quite sufficient to prove that the peculiar beauties of an etching are as yet entirely hidden from the speaker, owing, in all probability, not to his incapacity to appreciate them, but simply to the lack of a little technical knowledge. I trust, therefore, that I may be able to explain the general principles upon which the various kinds of engraving are based, to such an extent at least as may enable those of you who have only a superficial knowledge of the subject to take a more intelligent interest in it, and I trust that those of my audience who are already well versed in the various methods and processes may at least derive some pleasure in recalling and reviewing the work of the masters of this fascinating art.

Engraving, in its widest sense, is the art of incising designs upon any hard substance, and has been employed for many centuries in the ornamentation of all kinds of metal work; but we shall confine our attention, however, to the processes of engraving which have for their object the production of printed copies.

And first I would ask you to note that all such processes may be divided into two distinct classes:

Relief Engraving.	*Intaglio Engraving.*
Woodcuts in black line.	Line or Steel. Lithography.
Woodcuts in white line.	Stipple.
	Etching.
	Dry point.
	Mezzotint.
	Aquatint.

I have added lithography to this list, although it is not really an engraving process at all, as the prints are taken from a flat surface, but the results are so similar that we must include it in our list.

We shall notice the relief process first, as it is the commonest of all the methods of engraving.

As I have mentioned, there are only two kinds of relief engraving, viz., woodcuts in black line and woodcuts in white line, and in each case the process is the same, the difference only being in the manner of cutting. The print upon the screen is a black line woodcut. It was the earliest method of woodcutting, and in theory the process is very simple.

The engraver must first provide himself with a suitable block of wood. It must be hard, of an even and close texture, capable

* An extract from the paper under this title, read by Mr. Annan before the Edinburgh Photographic Society in December. The paper, although too lengthy for our pages, deserves mention as one of the clearest and most interesting expositions of the subject which has come under our notice.—Ed. W. P. M.

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of being cut smoothly and readily, and with no tendency to fray or split. Cherry, pear-tree, and similar woods are sometimes used, but boxwood is that which is most frequently employed. It is cut to about an inch in thickness, and the surface is levelled and polished, great care being taken that it should be of a perfectly uniform thickness throughout. The design or picture is next drawn upon the surface in a black ink, and the block is then ready for the actual engraving, which consists in cutting or gouging out the portions of the surface upon which there are no ink lines. This is a very slow and laborious process. It is performed with a variety of small and exceedingly sharp chisels and knives, and very considerable practice and experience are necessary to avoid cutting away parts of the design, which, you will observe, occupies by far the lesser portion of the surface of the block. This is the whole process. The principle employed is simplicity itself, and yet the possibilities are so great that comparatively few exponents of the method have achieved supreme excellence. The process of printing is precisely that employed in the printing of type. A hard roller charged with ink is passed over the surface of the block, so that the portion in relief becomes coated with a thin, even layer of ink. A sheet of paper is then placed upon the inked block and pressure is applied, when the ink becomes transferred to the paper and the print is produced.

PANORAMIC PICTURES.

THE making of panoramic pictures—*i.e.*, photographs of a scene including a much more extended view than can be included by the view angle of the average lens upon the plate—is an interesting field of work which the amateur in search of a change will do well to take up. Many special forms of cameras for panoramic photography have been introduced from time to time, but their bulk and price have militated against their popularity. Recently, however, the Eastman Kodak Company has brought forward a special form of *Kodak*, compact and reasonable in price, which should make the panoramic photograph more popular.

As a matter of fact, however, a special camera is unnecessary, and the most remarkable panoramas yet produced, those of Western canyons, by W. H. Jackson, were made with an ordinaay view-camera, and almost any form of hand-camera may be used with success. Much depends on the subject; street views, or scenes including long lines running parallel with the base of the view, are difficult; landscapes, including buildings, river views, and the like, are comparatively easy to handle. The principle employed is to make a series of negatives, one after the other, embracing all desired of the scene, by swinging the camera round on the tripod until the portion included on each plate just overlaps at one side what was included on the previous plate. The exposures of each plate should be the same, and they should be developed together to secure the same degree of density. A lens of medium angle and focal length, say 6 inches or 7 inches for a 4 x 5 inch plate, is most suitable for the work, and a strong tripod will be found useful. Having selected a subject, the camera is fixed so that the sun is over the right or left shoulder. If the shadows are coming toward you, begin the series of negatives required at the right-hand side of the view; if the shadows are receding, begin at the left. Having focused the first portion of the view, at the right-hand side, make two pencil-marks on your ground-glass or back of the camera, each falling one inch from each side of the plate, and note well the object through which the left-hand mark passes. Tighten the camera-screw and give the exposure required, timing it carefully. Withdraw the slide or holder, loosen the camera on its tripod, and turn the camera to the left until the object in the view through which the left-hand mark on the camera back passed in the first negative is so placed that the right hand mark cuts it; focus the view, tighten the camera-screw, note what object the left-hand mark passes through, insert a new plate and make your second exposure. This operation is to be carefully repeated until as many different

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negatives have been made as are necessary to include as much of the scene as is desired. The print combining these negatives in one picture, so joined that the seprate negatives do not show in the print, can only be obtained in a special form of printing frame, *Leigh's Combinations Frame*, or *Mellen's Panoramic Printing Frame*, which may be had from photographic dealers. The various joinings are accomplished by skilful manipulation with vignetters or absorbent cotton at each end of the negative, so that the portions of the picture which overlap from one negative to another shall blend in depth and tone so as to give a uniform print.

The Hydrometer. What photographer has not found at some time or another that his chemicals most perversely go wrong. However carefully he mixes them they seem to be haunted by a demon of perversity, and play havoc during development. Some chemicals dry out; sulphite of soda "goes squash," and the bottle of it contains water with the sulphite at the bottom. This water has not come out of the air, but out of the sulphite, and the sediment is of a concentrated but unknown strength. Woe to the photographer who tries to do careful work with such chemicals if measured in the ordinary way. It is this variation in strength which causes us to use the hydrometer, which is a graduated glass bulb which floats in a solution, and show the density of that solution by the depth to which the bulb and its attached stem sink. A "No. 1 Twaddle," with a glass cylinder for holding the solution to be tested, can be bought for a quarter. A fresh stock of the chemical which is known to be all right should be obtained and a solution made by weight to the proper strength. A sample is placed in the cylinder, and the hydrometer floated in it. If the depth to which the hydrometer sinks be carefully noted the basis for any future solution is obtained. However the condition of a dry chemical, a certain strength of solution will keep a certain specific gravity.

EDITOR'S TABLE.

THE ROTOGRAPH CO., 101 Fifth Ave., New York, is introducing a splendid line of large photographs of classical subjects, under the title of "Roman Art Prints." These are well adapted for decorative purposes in and about the photographer's place of business. A catalogue can be had on application.

THE following announcement explains itself. We are sure that our readers will join with us in wishing success to the new organization, which combines several manufacturing firms long known to the fraternity for their usefulness:

We beg to announce the organization of THE ANTHONY & SCOVILL COMPANY, a corporation formed under the laws of the State of New York, with a capital stock of $2,500,000, for the purpose of acquiring, controlling, and extending the business of the several companies hereto subscribing.

The executive offices and salesrooms of the new company will be located at Nos. 122–124 Fifth Ave., New York, with a branch office in the Atlas Block, Randolph St. and Wabash Ave., Chicago.

The officers of the company are:

R. A. ANTHONY, President.

F. A. ANTHONY, Vice-President and Treasurer.

C. B. STANBURY, Second Vice-President.

A. C. LAMOUTTE, Secretary (formerly the Vice-President and Manager of the Scovill & Adams Co., New York).

W. I. LINCOLN ADAMS, former President of the Scovill & Adams Co., of New York; THOMAS W. STEPHENS, former President of the Columbian Photo-Paper Co., and W. T. WISNER, formerly a director of E. & H. T. Anthony & Co., will, with the above-named officers, constitute the Board of Directors.

It will be the policy of the new company to prevent as far as possible the contraction of credit by extending to customers in good standing a line in accordance with the credit limit allowed them by the various constituent companies.

THE ANTHONY & SCOVILL COMPANY will also be trade agents for the HAMMER DRY-PLATE CO., of St. Louis, Mo.

We thank you for the favors and patronage accorded to us in the past, and hope you will bestow the same courtesies on the new company.

Very respectfully,

E. & H. T. ANTHONY & CO., New York.
THE SCOVILL & ADAMS CO., of New York, N. Y.
COLUMBIAN PHOTO-PAPER CO., Westfield, Mass.
GOODWIN FILM & CAMERA CO., Newark, N. J.
THE MONARCH PAPER CO., Binghamton, N. Y.
AMERICAN OPTICAL CO., New Haven, Conn.

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THE VOIGTLAENDER & SON OPTICAL CO., 135 West 23d St., New York, has just issued a new edition of the *Collinear Catalogue*, containing particulars of the latest introductions in this series of objectives. It is well worth sending for, and can be obtained free on request. Some days ago, during a hurried visit to the works, Mr. PATTBERG, the manager, showed us a few convincing results of tests made with the Collinear Series II. and III. alongside of other anastigmat lenses, and the display of power was remarkable. Photographers desiring a lens for special work under difficult conditions should investigate the advantages offered by the Collinear in speed and defining power.

THE Portland, Oregon, Camera Club has just closed the most successful year in its history, and Mr. S. C. CATCHING, the energetic Secretary of the club, writes us that the prospect for 1902 is most favorable. At the recent annual meeting the following board of officers was elected: S. A. Thrall, President: Alfred Anderson, Vice-President; S. C. Catching, Secretary; C. H. Hoeg, Treasurer; M. R. Spaulding, H. J. Thorne, Wm. S. Macrum, H. Claussenius, Jr., and J. W. Buckley, Directors; T. Birdsall, Lantern-slide Director.

CHARLES COOPER & Co., 194 Worth St., New York, send to our table their new *Chemical Price List* for February, showing the prices current of the chemicals used in photography and kindred processes. A copy can be had on request to CHARLES COOPER & Co.

MR. G. GENNERT, 24 East 13th St., New York, has recently introduced a new trimming and cutting board which deserves more than a passing word. This is the Stevens Trimmer, at present made in one size only, for prints up to 6½ x 8½, has a swinging knife of novel construction, which is in constant contact with the cutting edge, and yields a clean, clear cut, besides being self-sharpening.

Another novel feature is a ruled transparent sheet attached to the board and covering the print, so that the trim of the print may be arranged parallel to any desired line of the print.

Mr. GENNERT also offers Pyrol tubes containing Hauff's Pyrol, the new crystalline form of resublimed pyrogallic acid. Similar to Hauff's Ortol tubes, these are arranged in sets of two, a soda cartridge and a Pyrol tube. A set makes sixty ounces of single or double solution developer, and is to be recommended to amateurs and professionals alike.

THE Polychromatic plate, made by JOHN CARBUTT, Wayne Junction, Philadelphia, continues to attract attention among those interested in the possibilities of color photography. Dr. JOHN NICOL writes of it as follows:

"As a proof of the polychromatic qualities of the plate, and of how perfectly the color filters are adjusted to its range, we have before us a photograph of the solar spectrum in black and white, from C to considerably beyond H, *and for the first time* in a very close approximation to the natural comparative luminosities; from D to G, including the highest, which falls off toward and beyond H, until the two ends, the red and the violet, are about equal in luminosity. The photograph is the result of three separate exposures, through the blue, green, and red screens, the relative times being 3, 8, and 12; and their perfect adjustment to the range of the plate is shown by the perfectly harmonious blending of the colors."

We have before us the spectrum photograph mentioned by Dr. NICOL, together with the tests of the plate made with the Chapman Jones Plate-tester, and fully coincide with our colleague in his estimate of the color reproductive power of the new plate.

SEED'S new Orthochromatic Plate for portraiture seems to be regarded with unusual favor, and is rapidly displacing the plain plate in many studios. This is a sign of progress. When once the professional photographer learns to appreciate the advantages of color-sensitive plates under the skylight we believe that he will use them exclusively.

Photograms of the Year 1901 has enjoyed a larger sale this year than ever before, and deserves the growing popularity given it. The announcement among our advertising pages shows the volume is one which the progressive picture-maker cannot afford to miss. Our neighbors, TENNANT & WARD, who are the American agents for *Photograms of the Year*, tell us that the edition will doubtless be exhausted at an early date. Those desiring copies should secure them without delay.

ANY of our readers having extra fine negatives of interesting subjects made with lenses manufactured by the BAUSCH & LOMB OPTICAL CO., Rochester, N. Y., would do well to communicate with them, stating size of negative and subject of picture, or, better still, send a specimen print on approval, as a new catalogue is in preparation, and the company desires to secure as large a variety as possible of photographs illustrating the special advantages of their different series of lenses. Kindly write or send prints at once, as the catalogue is now well under way. Address the Advertising Department, BAUSCH & LOMB OPTICAL CO., Rochester, N. Y.

WE are glad to notice the growth of the business of our friends, Messrs. GEORGE MURPHY and WILLIAM H. MURPHY, of this city. The list of specialties stocked by this enterprising house, given on another page, comprises most of the standard apparatus and supplies used in photography. Readers seeking fresh goods and prompt service will find both at this interesting store.

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A PORTRAIT GROUP

By H. Rocher, Chicago

Illustrating American portraiture twenty-five years ago

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WILSON'S PHOTOGRAPHIC MAGAZINE.

EDITED BY EDWARD L. WILSON.

VOL. XXXIX. MARCH, 1902. No. 543.

PORTRAITURE.

WHAT, it may be asked, can be the justification for bringing so threadbare a subject before men who understand it as they understand their alphabet. The subject is indeed a well-worn one, but it has lately been my privilege to see many hundreds of specimen photographs, not those destined for exhibition at a convention, but the regular run of work, ranging from showcases in Boston, New York and Philadelphia to the windows of men in towns down to 3000 or 4000 inhabitants. And the only possible verdict is, I think, that there is still much to be learned. We do not any longer vex our souls over "oyster-shell markings" or other vagaries of the nitrate bath. Plates, chemicals and paper are now so perfect that the manipulative end of things does not any longer trouble the man who is reasonably careful, but when we compare some of the results of wet-plate days with the results of to-day, we are bound to conclude that the art side of photography has not progressed as it should have done if it had received all that attention which might have been bestowed upon it as the technique of photography grew easier. Portraiture is the most difficult branch of the art, and with a great majority of photographers it has never risen above mere "likeness taking." How seldom it is that there is any harmony between a figure and its background. It is often better for these to blend into each other than to have a sharp cut line running all round the figure. I know some will shriek of fuzzy or smudges at this, but there is a wide gulf fixed between the heavy shadow of the imitator and the delicate balancing of the able man. I place this subject first only because so many really conscientious workers seem to overlook it altogether. It is not always that the whole outline of a figure will bear emphasizing. All photographers know this, and many are very skilful in their obtaining of a pleasing line. But the prominence of a line can often be softened by its surrounding as much as by altering it. The angle, for instance, of a black-sleeved elbow against a light background could scarcely fail to be distracting in its prominence; with a dark ground behind it it would be less obtrusive and allow the face to take its place without challenge as the spot for the eye to rest upon. Many portrait painters work in their backgrounds after the portrait is all but finished, and others work on the two alternately to ensure a perfect balance and correctness of key through the picture. The photographer has not all this power. He should as far as possible be able to see the parts to be emphasized or subordinated in the sitter, a sight which most men can acquire, but often only after much observant experience. And when it is seen the background may be adapted by moving nearer to or further from the sitter and by turning at different angles to the light.

Photography has a knack of being candid —and merciless. And as our sitters are seldom perfect in feature and form it behooves us to be able to notice those features which are faulty, and by discreet posing or lighting modify them. Among features the most attractive is the eye; but the

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mouth is one which perhaps is most expressive and characteristic and which requires the most careful handling. Any sign of self-consciousness is first shown in the mouth—or rather in the lips; and the natural curve of the lips will at once be lost. It is therefore very necessary to obtain a natural expression here—and it must not be *asked for*. Any reference to the mouth will make the sitter—especially the female sitter—at once uneasy and set the lips moving in a forced attempt to gain the required repose. Around and in the lips the life history is read more than in any other part of the face. Many of the lines around the eyes merely speak of age, those around the mouth tell more closely of the joy or sorrow of the past years. And a defect may lurk in one part of the mouth—as one eye may be more perfect than the other. A judicious poise of the head will prevent this being too noticeable. In the case of children the mouth is often most beautiful, a "poetry of curves," and it is a thousand pities when parents or photographers attempt to represent the golden age by requiring the child to adopt a set smile, or, too often, a grin. An open mouth is often suggestive of a somewhat vacant mind; it is, however, sometimes a natural feature, and should not then be changed, and often the lips may be slightly apart in girls or young women. In such a case the opening should be well lighted or we get a too emphatic black shadow which but poorly represents the beauty of the original object. In these cases the teeth do not show, but where the open mouth is a confirmed feature they require due consideration. To ask the sitter to close it almost inevitably results in a strained effort. Sometimes a request to just shut the teeth together will bring the desired effect, the lips naturally following them into a closed or almost closed position. Perhaps the best pose when teeth are *too* prominent is got by turning the face from the light and cutting off part of the lower side light. The higher side light will cause the upper lip to throw a shadow over the mouth. Do not be afraid of this shadow or lighten it by retouching. Too little shadow will make the picture unacceptable to the original.

The eye is a feature with which painters have juggled even more than the mouth. We can follow their example to a certain extent as we carefully "improve" the even curve of the lips with our retouching pencil, but if the photographer attempts to alter the size or shape of the eye, as the painter so often does, he courts disaster. He may, however, by careful handling avoid doing an injustice to the eye. Too much light, or stray lightings, often due to a reflector placed too near the sitter, makes the eye look smaller than it really is, and a small eye will not please the customer, who, without being able to locate the fault, will feel that the portrait does not please her.

We speak of persons as having "noble" foreheads, "good" noses and "strong" or "weak" chins. But the eyes and mouth are the features which most govern the expression. For the rest it is more a matter of judging the features as a matter of line in conjunction with the general contour of the picture. Thus a clean cut aquiline nose or a strong, square chin are good profile features; receding chins or small noses are often better full face. Large ears look doubly large if the hair is close cropped around them. They can be little remedied in retouching, but by a slight throwing out of focus, by suitability of background, or by the lighting or posing they may usually be brought to the necessary degree of suppression. The forehead is a feature that is too often badly rendered. It is the greatest unbroken expanse of skin on the face, that is, on the full face, and it curves in a way to receive a generous amount of the top lighting. As a result it is usually an expanse of white, and often still further accentuated by injudicious retouching. The forehead is really full of "formation," and requires as careful consideration in the lighting as any part of the face.

This article has already run too long for me to touch on more than the features. I will just close with a few words on retouching. In photography we get too much emphasis of detail, and in portraiture this is usually in the direction of too much shadow. By careful lighting much of this can be avoided, and for the rest the pencil can work away many of the smaller lines or spots, and soften (not necessarily re-

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move) the principal wrinkles. But lighten the *masses* of dark very carefully, and on no account altogether remove them. Entirely take the shade from under the eye or the lower lip, and immediately the picture suffers; and this not only in the eyes of photographic purists but also in the eyes of the customers, who judge the finished work without knowing the processes of its creation.

THE PHOTOGRAPHER'S SHOW WINDOW.

A GOOD window is an important factor in attracting trade, says the editor of the *British Journal of Photography*. This is proved clearly enough by the attention given it by successful business men. It is not likely that they would pay large salaries to expert window arrangers if their work were not regarded as important and its results remunerative. This applies in particular to the photographer. His window attracts readier and fuller attention than those of his fellow-tradesmen. Very few passers-by with a little margin of leisure can resist the temptation to look into it and criticise. The attraction is not due, as a rule, to any new idea embodied, or even to an old one in a new dress. It must be admitted that in nine cases out of ten they are unutterably orthodox. The attraction is more due to the human quality embodied in his wares. But there is no reason why this should not be heightened. It would be to his business advantage if it were. The character of the existing attraction should be held in mind when thinking of the best way of adding to it. It is such, for instance, that the popular working model would spoil rather than enhance. This may do very well in a chemist's window to call attention to the virtues of a patent medicine, but is altogether out of character with the kind of attention and thought in the mind of one looking at a display of photographs. The leading characteristic in the latter case is probably a critical one. Are the young lady's good looks brought out to highest advantage, or would a different pose suit her better? Would not the old man look better seated, the young man full instead of three-quarter face? Are black and white better than silver prints? Has the character and color of the mount much to do with heightening the effect it is desired to produce? There is no opportunity of judging in the heterogeneous jumble of prints. An effort should be made to gratify the trend of unconscious thought in the mind of the looker-on. It can be easily accomplished by taking a pretty face and figure in different poses, and showing them side by side. The old man could be shown sitting and standing, the young man full as well as three-quarter face. The same figures might be shown in black and white, sepia, and ordinary silver print, and the value of mounts by mounting one of the same kind upon different kinds of mounts. The judicious arrangement necessary would, in addition, evolve system and order out of the existing chaos of the window contents. It would also assist in reducing the number of prints displayed, a matter which, from an artistic as well as a business point of view, we have oftentimes advocated. The resulting impression would be of a piece with the color and pattern of the thoughts and feelings of the one looking on. This in itself is valuable, but is made more so by its practical business value. The prospective customer is more strongly attracted to the window; he is unconsciously gratified by the choice offered him, the field of choice being wider; he is more likely to see something that suits him, and the impression is conveyed that the photographer is fully up in all classes of work. The slight extra cost would speedily prove a most remunerative investment. This is but one way in which the great majority of existing windows could be utilized to greater advantage. There are many more that would suggest themselves naturally once thought is led into and interest aroused in the new direction.

To make safe edges in carbon printing glass plates the size of the negative should be bordered with opaque paper. These would then serve for any negative.

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KEEP A SCRAP-BOOK.

BY J. E. WATSON.

I FIND in talking with my friends that very few know what a pleasure and advantage it is to have a scrap-book. It freshens the memory and gives one new ideas about our interesting business. The usual excuse is, I am too tired at night after a day's work to bother with it, and yet it takes but a few minutes of your time, and, once begun, will be a source of endless pleasure. I do not keep my magazines. As soon as they are read I go through the *Century* or the magazine on hand, and clip out every picture that gives me an idea on posing, lighting, or grouping (not confining myself to those which *look* as if they could be copied in a photograph), but all the artistic pictures of every class. Then I go through the ads and clip out everyone that has an original idea in illustration.

Photographs for advertising purposes are used more every year, and quite a number of photographers add to their yearly income by giving this line a little attention. An 8 x 10 plate attractively illustrating some advertised article will bring from $10 to $25. In making such pictures the light and shade must be carefully considered as well as the surroundings. Actors make good models for this class of work. When girls or women are employed they should be refined and graceful in carriage. Of course, they must be good-looking.

You can easily make your scrap-books up of heavy manila paper. I find a book about 9 x 15 a good size. Keep the portraits in one book; general subjects and advertisements separate. A valuable library will soon be at your disposal for study and reference.

I also cut up my photographic magazines, and so secure every item of interest ready for use when needed: Formulæ, business hints, scraps of photographic history—in fact, everything that I think may come useful to me at any time. Often a picture can be improved, or will be a gem suitable for exhibition if finished in some way out of the ordinary; by referring to your scrap-book you will run across just the idea you want.

Give a liberal space for hints for new pictures that will please your customers and bring dollars to you. Often an item of eight or ten lines in a photographic magazine gives you the gist of the whole article, and by clipping it out you have it ready to serve you at a glance. The scrap-book quickly becomes a good investment.

THE RECOVERY OF SILVER RESIDUES.

BY "FESTINA LENTE."

THE recovery of silver from old fixing baths is a simple matter, and those who are in doubt whether it is worth their while may be enabled to arrive at a decision from a consideration of the following data and instructions for carrying out the process.

Procure a large bottle, holding, say, 64 ounces, or larger if you can get it. The larger the bottle the less often will the process require attention. Put into this bottle an ounce or two of granulated zinc, or, preferably, some rods of zinc long enough to reach up to the shoulder of the bottle. This is all that is required. The used fixing bath is thrown into the bottle instead of down the sink, and deposition of the silver in metallic form immediately commences and is complete in a few days. The silver is chiefly deposited as a loose, black powder, forming a sludge at the bottom of the bottle, but sometimes a portion attaches itself to the sides of the bottle, forming a lustrous coating. It is advisable to shake the bottle occasionally. When the bottle is full a few days should be allowed to elapse, and then the clear liquid may be decanted or siphoned off, care being taken not to allow any of the sludge to run away. The bottle is then ready to receive further quantities of used hypo, and the above process is repeated until the

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silver sludge has sufficiently accumulated to be further dealt with. It is then washed by filling the bottle with water three or four times, allowing the deposit to completely settle between each filling and decanting the clear water. It must now be filtered off and dried. For this purpose a large funnel and filtering material must be provided. For quantities of sludge exceeding an ounce or so, a clean linen filter should be used; for a less quantity filter paper may be used, but it would be scarcely worth dealing with except as an interesting experiment. Wet the piece of linen and fit neatly into the funnel. Shake up the washed sludge with some fresh water and pour onto the filter. Rinse the bottle with more water and pour onto the filter. It will probably be found that a quantity of heavy particles of silver are difficult to rinse out of the bottle. These may be removed in the following manner: Nearly fill the bottle with water, close the neck with the palm of the hand and invert. Hold the bottle thus for a few moments, giving it a gentle swirling motion, until the particles of silver are seen to settle down into the neck. Now hold the bottle over a clean basin or beaker and allow the water to run out slowly into the basin. The whole of the silver particles will be swept out into the basin by the first few ounces of water thus allowed to escape, and may then be easily washed onto the filter. The pieces of zinc will be retained in the bottle ready for future operations. Fresh additions of zinc will be required from time to time, as an equivalent quantity goes into solution in place of the silver deposited.

When no more drainings come away from the sludge the filter with its contents is removed from the funnel, placed on a plate or shallow dish and put in the kitchen oven till dry, or it will dry spontaneously in a week or so if put in any safe place where the air is dry. In this condition it may be sold to the refiners, or, if the photographer prefers to convert it into nitrate for his own use, it must first be fused in a clay crucible with its own weight of bicarbonate of soda, or preferably a mixture of equal parts of sodium and potassium bicarbonates. It is, however, useless to attempt this metallurgical operation in an ordinary fire. To effect the fusion of silver a bright red heat (1000°C.) is required, and such a temperature can only be attained in a fire or furnace provided with a strong draught. The writer has obtained small buttons of pure silver, weighing up to 100 grains, from the sulphide and chloride, by fusing with bicarbonates of soda and potash, using a good kitchen range where a strong draught was available, the fire being thoroughly cleaned and made up with fresh coals. Not less than forty minutes were required for the operation, with the draught full on. If the operation has been successful the rounded outline of the button of silver will be distinctly visible in the glowing mass at the bottom of the crucible, of a somewhat duller red. The silver will solidify almost immediately after removing the crucible from the fire, and the contents may then be poured out onto a clean hearth to cool. If allowed to cool in the crucible, the latter will have to be broken to get out the silver, or plunged bodily in boiling water until the mass of fused salts is dissolved away. The button of silver must be carefully cleaned from any adhering particles of the soda and potash salts, which is best done by boiling in dilute hydrochloric acid. The silver may then be dissolved in pure nitric acid diluted with an equal quantity of water, and the solution evaporated till crystals begin to form.

The purification of the silver sludge may also be effected by the following wet method, dispensing with the need of a furnace. The sludge is boiled in a flask or beaker with commercial nitric acid, diluted with two or three times its volume of water, until nothing further passes into solution. This operation should be conducted in a stink cupboard or other place where the fumes given off can readily be conveyed away. There will probably be an insoluble residue of sulphur and other impurities, which must be filtered out from the solution. The silver is now precipitated as chloride by adding a clear solution of common table salt until no further precipitate is formed. Much excess of the salt solution should be avoided, as it will dissolve a portion of the silver chloride. The silver chloride is thoroughly washed by decantation and covered with dilute, pure sul-

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phuric acid (about 1 to 10). Some clean iron wire, or iron nails free from rust, is then thrown in among the silver chloride and the whole left for twenty-four hours. The chloride will be completely reduced to metallic silver in a gray, spongy form, which must be washed free from the acid solution. In this form the silver is dissolved with great rapidity by nitric acid, and care should be taken to use a large vessel and to dilute the acid with at least twice its volume of water before pouring it on the silver.

Another method in use for the recovery of the silver from old fixing baths consists in adding to them a solution of potassium sulphide, called also "liver of sulphur." This causes a precipitation of the silver as sulphide, a black, heavy powder. It would be dealt with somewhat similarly to the metallic silver obtained by the zinc method. It is soluble in boiling nitric acid, leaving a residue of sulphur. The objections to the method are the extremely disagreeable odor of the potassium sulphide solution and its rapid decomposition, necessitating a fresh solution being prepared whenever required. On the other hand the recovery of absolutely all the silver is assured by this method, whereas, it appears from the writer's experiments that a small proportion of the silver, something less than 5 per cent., escapes reduction by the zinc method. If the sulphide method be used, the old fixing baths are allowed to accumulate till the storing vessel is nearly full, when a fresh, strong solution of potassium sulphide is stirred into the bath until the color of the precipitate formed changes from black or dark brown to a light yellow color. It is unnecessary to continue to add the potassium sulphide until no further precipitate is formed, as sometimes stated, since, after all the silver is precipitated, further additions of potassium sulphide cause a precipitate of sulphur by reacting with the hypo itself, and the point of complete precipitation of the silver may be readily known, as stated above, by the change from a dark-colored, heavy and bulky precipitate to a light-colored, thin, cloudy one, which does not readily settle out. After settling, a sample of the clear liquid is taken in a test tube and tested with a few drops of the sulphide of potash solution; if found to be free from silver, according to the indications given, it may be run away. The zinc method will be found by amateurs much the preferable, the small amount of loss being easily compensated by the gain in time. Where there is a very large consumption of silver-sensitized materials a small tank or cask may, with advantage, be used for storing and desilverizing the used hypo. This should be fitted with a stopcock a few inches from the bottom, or the hypo when freed from silver may be run off by a siphon.

We must now consider the question of the proportion which the value of the silver we may expect to recover bears to that of the materials used. If we know the amount of silver salts in a plate of given size we can easily calculate the amount of silver it should yield, and, making due allowance for loss and for silver deposited in the negatives, we can find a percentage figure for the expected recovery which shall be, for practical purposes, constant, and, since the price of silver does not vary to any great extent, though it fluctuates slightly and periodically, we have at once a practically constant percentage on the value of the materials consumed. Having made analyses of several plates, the writer finds that this constant may be taken at 5 per cent., and believes that, for all practical purposes, this will be found a safe guide. Moreover, it is in accordance with his actual results in a recovery of silver residues.—*The Practical Photographer.*

SPEAKING before an English camera club on winter photography, Mr. W. E. Dunmore strongly advised the snap-shotter to work against the light, provided the sun is not shining brightly at the time, better results being obtained in this way than by any other. The early months of the year are the best for obtaining transient artistic effects, and wild or even wet weather should not deter the worker.

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THE PHOTOGRAPHER'S MOUNTS.

In a recent lecture before a Scottish society, Mr. J. W. Eadie gave many useful suggestions about mounts for photographs, laying special emphasis on the importance of considering each print individually in the choice and management of the mounting to be adopted. We present a few extracts from the lecture as affording timely information on the subject.

Introducing his subject, Mr. Eadie first remarked on the zeal with which many photographers expose, the diminished enthusiasm they display for the irksome work of development, and called the man happy who had even an unmounted print of every negative in his collection. That mounting was hardly worth a thought was the opinion he proposed to combat. Why do we mount prints at all? he asked, and asked the question twice. Why mount? In the old days mounting was a necessity, because prints were made on albumenized paper, and they curled unless they were mounted. A plain white card was then *de rigueur*, and if anything additional was wanted artistic lines were drawn in red or brown around the print. Later, those who drew such lines thought more elaboration was needed, and they drew wonderful designs at the corners.

At the next stage two improvements, so-called, were introduced, and they were considered great improvements; the first was the Indian tinted mount, and the second, the plate-sunk mount. These have been condemned with more or less vigor and reason by the modern critics. These mounts came out on the advent of platinotype printing, and later of the bromide process. They are condemned on the ground that they are both shams, and modern critics condemn them on that ground alone unstintedly. The lecturer at this stage explained how these types of mount had come into favor, remarking that it was a big mistake to combine both in the same mount, and bigger still to put the plate-sunk mark, as was invariably done, outside instead of inside the print, as would have been the case had the picture been pulled from a plate. Those who desired to have the breaking-up effect of the plate mark on their mounted photographs—the effect which enabled the print to merge into the mount, an effect worth striving after—could secure it by abjuring the sham and following a variety of ways, such as indenting the print while soft with an ivory paper-knife. This effect is best obtained on Whatman's or similar makes of paper. Other ways are by printing out a tint, by washing a tint by means of water color, or by laying on a paper tint.

Passing on to modern mounting, Mr. Eadie repeated his question, Why mount? For answer, he said there was no absolute reason why one should Many prints are strong and heavy enough to frame close up without being mounted, and he passed around several examples. Assuming, however, that it is desired to mount, the reasons are chiefly these: (1) It is desired to isolate the print; (2) to enhance its good points; (3) to take away attention from its bad. Why we isolate was self-evident, he thought. To attain the second end one must select a mount which will bring out all the qualities we wish, and at the same time hide those bad ones which can't be got rid of otherwise. Although there was nothing inherently wrong in a white or in a black mount either, for that matter, their use was extremely limited, and their choice dependent on the quality of the print and the impression to be conveyed to the eye. In this connection he told the story of the Japanese artists, who take three days to do a picture, and then spend three weeks studying where they will put the signature. Having, like the Japanese artist, produced something worth mounting, consideration must at this stage be given to trimming. Here the essential rule is to ask how much can be done without. This drastic use of the knife at once rules out the commercial mounts of standard sizes, which are generally objectionable, *per se*, on account of the crudity of their tints. Over and above the convenience of the home-made mount, as with a few sheets of tinted paper and two or three straw-boards, one was ready to begin mounting, there was the necessity of making the mount suit the type of print. The great advance which artistic photography has made, and the increased

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demand by the persistent amateur, has forced those alive to his needs to meet the want for suitable mounting material. We have now a host of rich tints and colors in such series in the cover papers obtainable from every paper warehouse. These, and similar heavier papers, are suitable for portfolio use, but the truth is there is nothing too mean to be used as a mounting paper, provided it be of the requisite tint or texture.

Recently there has been a great run on commercial brown paper, but it is chiefly useful for warm colored prints. To illustrate this point he showed a print on a white mount. The sky was too gray. The same print on a black mount showed up the sky lighter, but affected the other high lights, compelling a search for a mount with a medium tint.

Certain principles emerged here, he said. Every print has a certain dominating tone, and a correct mount for that print is one which harmonizes with this tone, or is in agreeable contrast to it. For the beginner the study of mounting in harmony is easier than mounting in contrast. Mounting in contrast is largely a matter of experiment, involving a knowledge of complementary color and a good eye for tint. He mentioned that there was no use in looking for contrasts for black and white prints, because black contrasts with white and harmonizes with it as well; and between the two there is the whole range of grays.

Touching briefly on the sizes and proportion prints should bear to mounts, he issued a warning against showing a speck of print in a sea of mount. If the desire were to carry out the horizontal idea, the sides of the mount should be wider than the top and bottom; if the panel shape were in hand, the extra margin of mount should appear at top and bottom. As to shapes, ovals and circles were to be avoided in the majority of cases, as not one print in a hundred correctly filled the circle.

In making home-made mounts regard must be paid to (1) texture, (2) tone, and (3) tint. A rough surface mount with a smooth surface print will accentuate the smoothness, and *vice versâ*. Having already remarked on the effect the tone of the mount has on the two extremes of black and white, he said there are two main lines along which we must mainly go to get an intermediate effect. We may use a gray mount or a white mount, such as a Whatman faced paper, and surrounding the print with washes or lines of varying widths in the predominant color of the print. The tint to be selected, provided it complies with the rule as to showing up the good points of the print, is largely a matter of taste.

Besides the method of lines and washes, one might use strips of varying tints and widths to get the same effects; in some cases even a dead black line is not to be despised. The safe thing is to avoid multiplication of tints. Another very good method, when the print will stand it, is to mount it with a very deep bevel. Another easy and common method is to mask the print and then cut it down, so as to show a narrow white line all around, afterward mounting it. This method is greatly run upon at present. It is not every print that will stand it, though. Before closing, Mr. Eadie touched on decorative mounting by the use of water colors and designs cognate to the print, a method he uses himself with great skill and taste. In closing, he admitted that the whole question of mounting was so much one of taste and temperament that it would be foolish to dogmatize; his desire had been to indicate some of the lines along which it was advisable to go, and to give some food for thought on this important but as yet too much neglected subject.

We have recently seen some "terrible examples" of wiry retouching in some 11 x 14 heads which have been sent to us. The posing is good, and the lighting and technique are alike excellent; but the individual eyelashes are scratched in so evidently that they suggest anything but a healthy eye, and must, one would think, lead to dissatisfaction on the part of the sitter. The mistake is in applying carte methods to large sizes. The latter should be retouched only on the back of the plate. A little ground-glass substitute rubbed on the glass will give the necessary tooth, and the diffusion caused by the thickness of the glass will be just sufficient to prevent any undue sharpness.

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VELOX.

BY W. E. A. DRINKWATER.

PART II.

LOOKING back at the previous article, I can see that the reader may say: "This is mere special pleading. Has this wonderful process no drawbacks—no disadvantages?" Well, such a thing is hardly possible in this world (and I imagine there will not be much photography in the next), and there is a point in which Velox would be said by some people to be at a disadvantage, but even that point can be turned to good account. I refer to the need of exactitude in exposure. There seems to be practically no latitude, except with very expert hands. To get a good result, the exposure must be exact. With print-out-paper, and the power it gives of watching the progress of printing, there is no need for latitude and no excuse for an over- or under-exposed print. With carbon we have an invisible image, but with enormous latitude in the subsequent slow development. Platinotype gives a partially visible image, with a little (not much) latitude. Even bromide paper, with its invisible image, gives one some amount of control in the slow developer; but with Velox and its practically instantaneous development there is, in reality, very little time for control. The print, if underdone, remains a ghost, and, as the developer is already at full strength, there is no possibility of forcing; if over-done, unless you are as agile as an acrobat in fishing it out of the developer before you can say "Jack Robinson," it is black and past redemption. If, however, it is stopped in time, by plunging into the acid fixing bath, it will not suffer in color as a bromide print would if similarly treated.

Now, is this such an enormous drawback? I think not. It is not difficult, by the system of trial trips on small pieces of paper, to arrive at the exact point desired, and, once attained, it is known for all future work under the same conditions. By introducing uniformity and method into our work, once the correct exposure is known and marked on the negative, every succeeding piece of Velox paper is a certain print before exposure, and twelve pieces of paper can be confidently relied on to produce twelve prints, each one as good as the others. Uniformity in the paper itself we can depend on; the same may be said about the developing and fixing solutions, for these may be purchased ready weighed out from pure chemicals, and only requiring dissolution in water. Clearly, the point at which we can depart from uniformity and thus invite variation in the prints is in the exposure.

The following items, if attended to, will save a lot of waste prints: Always use the same light for exposing by, and always work at the same distance from the light. The latter is the big stumbling-block. "How long exposure did you give it?" I inquired of the producer of a smudgy-looking, greeny-black Velox print. "Twenty seconds, timed by my watch; same, exactly, as this one had"—producing another almost perfect print from the same negative. "How far away from the light?" "Oh, I just held it up in front of the gas, same as I always do—about four or five inches, I should think." Herein lay the cause of his and many another's, failure. Just ask someone else to hold up a printing frame at four inches from the gas for twenty seconds, and let him time his own exposure by looking at a watch. Meanwhile, place yourself at right angles to him and watch how that frame will wobble to and fro, sometimes nearer and sometimes further from the gas. There can be no uniformity that way—the thing is impossible. Far better have a definite mark on something rigid at which to place the frame each time. A piece of string with a loop at one end slipped over the gas bracket, with a good knot in it at the exposing distance, will also answer well.

If working from quarter-plates, four inches will be a convenient distance; from half-plates, eight inches will secure even illumination, but will require *four times* the exposure necessary at four inches; from whole-plates, twelve inches will be correct, with an increase of exposure amounting in all to *twelve times* the first named. If you

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are using incandescent gas, twelve inches may be fixed upon at once for all three sizes, as the exposures are well within reasonable limits on account of the extra power of the light, although, if care be taken to constantly revolve the frame, and so secure even illumination, good work can be done at four inches, and thus reduce the time of exposure.

I strongly advise all users of Velox papers to "go the whole hog" and use the M. Q. developers made up by the firm especially for use with the paper. Absolute purity of the chemicals used is a *sine quâ non* to the process. Pure metol and hydrokinone we can easily obtain, but sulphite of soda is a very variable salt, and is, at the same time, the most important of the ingredients when purity is considered. It stands to reason that the firm who issue the paper will, from the strictly commercial stand-point, naturally, and for their own sakes, provide the best possible preparations for use with the paper. There is another point of view, too—our own comfort. The formula gives the amounts necessary to make up ten ounces of solution, and seven grains of metol can scarcely be called an ideal quantity to weigh with nicety. But when we want less than ten ounces—as we generally do—what about weighing out the required fraction of seven grains? It does not sound like a job within the province of the ordinary amateur, and I am sure the average professional would turn up his nose at such a proceeding when he could buy it already weighed. The M. Q. packets, when dissolved, should be immediately corked up in one-ounce bottles filled to the cork, and the solution will then retain its developing power for a considerable time. With regard to the acid fixing bath, it does not matter so much; but while the price is so reasonable, the saving of labor effected by using the put-up preparation is worth consideration.

Now we come to another point, which is to many the stumbling-block and great disadvantage of Velox printing—viz., the use of potassium bromide and the exact quantity to use. Seeing the absolute necessity for its presence in the developer, many have asked, with a fair show of reason on their part, why the M. Q. packets are not sent out with the exact amount included. The difficulty is that the makers of Velox do not also supply the water used by photographers all the world over. Its sources are many and varied, hence its composition is varied with the locality. They have, however, approached as near the ideal as possible by inserting in each package the minimum quantity of bromide with which the paper will work free from fog, leaving the thoughtful worker to add the amount which his particular variety of water calls for. Perhaps the simplest way to work is to always use distilled water, and, having found the amount necessary with that, stick to it; but even distilled water varies with its source. It should not, of course, but it does for all that. In the *Velox Manual* bromide of potassium is described as the wizard. I should be almost inclined to call it a witch, because, while truly it is a conjurer, and presents a smiling face, as it were, by brightening up our prints and dispelling fog, still, if we get too far in its toils and drink too deeply of it (metaphorically, of course), we are undone, and greenness—hideous greenness—comes over our prints. Hence great care and judgment are required in adding it, drop by drop, until just the right amount is discovered, and then, as long as the source of our water remains the same, we may confidently continue to use that amount.

Another vice to which some Velox papers (particularly the glossy) are prone is "surface markings"—which, by the way, are common to all developed emulsion papers with high surfaces. I remember well the disgust with which I greeted my first Velox print—it happened to be on glossy paper, and a vignette, too—because of the intricate network of fine hair-lines over the entire surface. That print was thrown away, and very nearly proved my last Velox print as well as being my first. I have learned better since, and have easily cleaned such markings off heaps of prints by rubbing with cotton-wool damped with methylated spirit after the prints were dry. Still, this is troublesome, and I notice that the manufacturers announce an actual preventive by using two drops of a 10 per cent. solution of potassium cyanide in each ounce of developer. It is not precisely a pleasant chemical to handle or have about one, on account of its highly poisonous

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qualities; but, if it prove an absolute remedy, I for one shall, exercising all due caution in handling and storing it, use it in preference to the laborious after-cleaning method.

A word or two may be added about the difference in results obtained on the two grades of Velox—Regular and Special. The latter is a paper much more rapid in exposure, but somewhat slower in development, than the Regular Velox, and giving very soft, delicate images, while the Regular paper has a decided tendency toward giving bold, contrasty prints. It follows, therefore, that the regular papers will be chosen when vigorous subjects are being treated with, or bright prints wanted from a somewhat flat negative, and, on the other hand, the Special papers are particularly suitable for negatives which incline toward harshness, and where soft and delicate effects are required. I may say that, as most of my work on Velox paper has been from portrait negatives, I have found the Special papers give me all the range I need by the addition or omission of portions of the bromide solution. With these Special papers there is not the same tendency toward greenness when using extra bromide that is met with in the Regular papers. To my own particular taste there is something particularly nice about a photograph on the Special portrait paper. The delicate grays of the half-tones, richness of the shadows, and pearliness of the high lights, combined with the exquisite silk-like surface of the paper, have a charm quite their own and peculiar to the process. Other workers pin their faith to (and demonstrate their faith by their good works) the Regular papers for landscape and bold effects generally; and so each section is catered for and provided with the means of following their own bent.

The treatment of Velox papers with a view to modifying the color must be deferred for consideration to another and final chapter.—*The Photographic News.*

(To be continued.)

"SHOW SUNDAY."

BY PAUL CLARE.

ARTISTS with the brush have for a long time observed the custom of holding an annual exhibition, in their studios, of the work which they have produced during the year. The custom is perhaps more religiously followed in European countries, where the artists' year sharply hinges on the opening date of some great or national exhibition. Through the year he has been working on certain pictures with an eye on sending-in day, and just before that anxious time he invites his patrons—if, happily, he has any—the critics, and his friends to view the year's work. This gives everyone an opportunity of better judging the work than is possible when it appears in a crowded gallery, surrounded by scores or hundreds of other pictures. The critic may write his "opening-day" note in advance, and the patrons may be judiciously handled with a view to immediate or prospective sales.

This show Sunday idea is worth a wider attention on the part of photographers. I do not suggest that they should choose that day for a special exhibition—Sunday, unfortunately, is too little observed in some studios—but the idea of a fixed time to make an effort, to assemble friends and customers at the studio, and to make a display of the best work done during the year is one which, if followed out, would in many studios lead to good results. The photographer *must* push in some way for publicity. Even good photography will bring more sitters if behind it there is a careful scheme of advertisement.

What time of year should the photographer choose? That depends on the place. A man in a summer resort could not make a display in winter; and, on the other hand, summer is absolutely dead in some large cities. Each photographer must, therefore, decide for himself. The State or National Convention suggests a reason for the display. Let the photographer invite his patrons to inspect the display which he is preparing for the Con-

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vention, or which has been returned after the exhibition.

The display should be as extensive as possible. Suppose that six pictures are to be sent; do not just give those six a special place of honor all in a class by themselves. Choose rather as many pictures as possible from the work of the past year—a collection, say, from which the State assignment will be selected. The reason for this is obvious. If six pictures are slated for the honor, six persons will probably consider that they have received a delicate mark of attention. If fifty pictures are shown, without too sharp a distinction being drawn between six and the remaining forty-four, the reasonable inference is that fifty rather than six persons will feel the attention.

It is a question whether for one day all business should be suspended and as many people as possible be got to attend the show, which might elaborate into a kind of quiet soirée, or whether a display extending over a week should be arranged. In the latter case the display would be confined to the usual rooms, and the studio would be open for any sittings which might be required. Probably in most cases the latter would be the preferable course.

To succeed with any show day the photographer would require to put in some solid, thoughtful work before the event. The display itself could be largely arranged for by making an extra print from time to time during the year at the time of an order being given. And it might prove a good plan occasionally to make a careful print from some negative which failed to secure an order rather than from the ones from the same batch which were preferred. It may be some months since the sitting, and this special print will be fresh to everybody, and even to the original.

But the special work will be mostly in the direction of getting the people to the studio. The best display in the world will be a flat failure if the folks keep away. It will mean a carefully thought-out effort, probably through the local papers, and also by a neat, well-designed invitation and many personal letters. The thing *must* be talked about in advance—and afterward. The advance talking depends on the engineering of the photographer; the after-talking on the thoroughness and quality of his show.

THE BACKGROUND.

More than half a century ago, at the time when 4 x 4 was *the* size for photographs, we had not stumbled upon the vexed question of backgrounds. A plain, ungraduated background served for blonde and brunette alike, the result being that from a dozen photographs in a case only one would probably be somewhere near correct in its tone scheme, although the whole dozen seen together, and as so many "decorative" masses, gave an evenness to the showcase, when seen across the breadth of a street, which it has not since possessed. At last it was discovered that there was quite too much of one good thing in this limitation of background, and the painted "scenic" background became the fashion. Unfortunately, as is too often the case, liberty became license, or, perhaps more correctly, puerility. Released from simplicity the photographer, egged on by the "background artist," broke the bounds of legitimate accessory with his rustic scenes and stiles, seashores, woodlands, etc. A few workers resisted the extremes of the innovation, at the same time taking the hint and escaping from a single background and especially from a fixed rule of using it. Atmosphere was a thing unknown in those days of chemical excellence; but by turning their backgrounds to different angles they could be made to look lighter or darker as required and so balance any face or hair. The alternative to backgrounds—curtains—was more or less in favor, and it seems not a little curious that these should not have come more to the front. A few photographers now use tapestry, as a few did then, and it is difficult to say whether the effects obtained were better in those days of universal detail and crispness or in these days of selection and atmosphere.

Ten years ago—if not five—the background seemed as little understood as ever. And it would seem as if nothing shows the mental and artistic progress of a photog-

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rapher more surely than his choice of backgrounds. There is no absolute rule; it is a matter of subordination and of unity between ground and subject. Falk and Strauss understand backgrounds and use many. Core and MacDonald also understand their subject and use few. Each method or many methods may be equally right.

The evils of backgrounds, as of accessories, seem most largely due to a too close and thoughtless following of the conventional designs submitted by manufacturers. In extreme cases some not wealthy photographer will, in all sincerity of purpose, spend more than he can really afford on some good background prepared by some well-known firm of A1 standing. Naturally, having got such a treasure, he makes the most of it, using it in season and out of season. There is no suggestion of repose in the picture and no harmony between the ground and the subject. The work is, in short, drifting toward what might be called 99-cent work.

When perfection is sought every separate subject requires its own setting, and the same pictorial background is seldom usable twice in succession. This was so thoroughly learned by the profession that a few years ago the favorite background was dark, with just a patch of light upon it. A dark background is a good thing and one should be in every studio; but when it becomes the leading fashion it is a good thing overdone. Many who followed the fashion of dark backgrounds sought their art among violent contrasts; the light concentrated on a face before a dark ground was so very effective, so "strong" and "vigorous." Incidentally, too, it was so very easy when not done understandingly, because it got rid of all that bother of delicate modelling which is so much a factor in the work of the really able man.

Now that the universal dark background seems to have had its day, photographers would do well to grasp the simplicity of their needs. By substituting brains for picture backgrounds not only will they do better, because more thoughtful work, but they will also save in their cash outlay. A few picture backgrounds—in some businesses—will be useful to those who like that sort of thing, but if they are not used *except* when preferred by the customer their number need be few. With a light and a dark ground and with a graduated one the portraitist has a wide range of possibilities. By placing nearer to or further from the sitter (generally the further from the softer and better the effect), and by altering their angle in relation to the light, any effect of tone may be obtained.

Life is not all a matter of subdued or minor key, and if used to excess plain backgrounds seem to obtain a sort of negative quality. It was this need of a positive note which brought in the background and which will keep it in. For the photographer who is working on new lines an assortment of designed and plain fabrics of suitable lengths will add the required note to his repertoire. These may be hung as required, or at least not permanently kept in position in the studio, being flung over some light iron bar run across the studio about eight feet above the floor. A year's practice with materials so simple that they force the photographer to think as he uses them will make him achieve many things which before he thought impossible.

TINTING PHOTOGRAPHS.

BY ROBERT MELVILLE.

It is a little surprising, when we consider that the process is so very easy, how few photographers ever tint or color photographs. So many photographers could do with just a little more business if only it could be coaxed their way, and often a tinted photograph would do the coaxing; and it is a line in which almost all of the occasional extra dollar which it brings in goes to pay for skill and labor and very little for materials. The colored photograph has in the past been almost entirely confined to the two extremes of photography—either the very cheapest trade or the most expensive. *Some* of the expensive work is very beautifully done, particularly in miniature work,

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and the average photographer can scarcely hope to attain to such skill. In the very cheap work the coloring is very crude, being often applied in a thick coat of body color, especially if a subject can be obtained who wears a uniform. All can steer clear of this extreme and do work which will be pleasing to a paying class of customers. The photographs are to be tinted rather than colored. A pigment coating of paint quite destroys the gradation of the photograph by covering it up; a transparent wash, on the other hand, blends with every detail and shade of the photograph, and sufficiently suggests the color while retaining all the texture and modelling. The photographer who knows how to spot a print—and what photographer does not—has sufficient skill to tint one. There have long been materials on the market for tinting both photographs and transparencies, and just now two firms are advertising excellent complete sets for the work—a sign, by the way, that colored pictures have vitality in them. The photograph to be tinted should be printed on a matt paper, and if anything a trifle light. Coloring—like spotting—should be done after the photograph is finished and mounted. What little coloring I have done has been with the print flat on a table, but probably it would be easier to work if propped at an angle. The retouching frame would seem to be a suitable support for it, and it should be placed in a good light. The brushes required are three—a fine sable, such as is used for spotting, and brushes of the next sizes larger, which may be of camel's hair. The colors required may be obtained in 10-cent tubes (oil), and will be green, yellow, Prussian blue, crimson lake, burnt umber, and burnt sienna. A little turpentine will be required to mix the colors, and it will be better to obtain it from the art stores or the druggist rather than from the grocery. An inverted saucer or plate makes a good palette. To obtain flesh-tint squeeze equal lots of sienna and lake onto the plate and mix them with turpentine, using the larger camel's-hair brush. Very little paint will suffice. Thin with turpentine until it is a light pink-brown. Paint the face with the fine sable brush. Do not charge the brush with too much color, and do not go too near the eyes or the outlines of the face, for the color will spread very slightly. The color is laid smooth and even by dabbing it very gently with the tip of the third finger. A very little touch of lake dabbed on the cheek may flatter some sitters — don't overdo it—and the lips may be similarly tinted. If the eyes are blue, a very little thin blue must be applied, and if after the picture is finished the whites of the eye appear too staring, they may be toned down by the slightest suggestion of a thin blue wash over them. The hair must not have too much color worked into it. For dark hair, a wash of umber; for light, a wash of sienna, or of sienna and umber mixed will suffice. The coloring of the dress may be gaudy, or it may be almost entirely omitted, according to the taste of the customer. The yellow will help to emphasize the possession of rings or chains, and so give pleasure. For a tinted picture the whole scheme should, as far as possible, suggest lightness. A little green or well-trimmed blue will do much for a plain background, and I would scarcely suggest using any other.

I have here confined myself to a bare outline of the process and to a very limited range of color. Flesh-tints may be obtained direct from the color store without mixing. But the photographer will probably attain the best result by first attaining some proficiency with the few colors and simple methods recommended. Afterward he will find his way to more colors.

In very many businesses the photographer is assisted by one or more of his family. Tinting pictures is an ideal occasional occupation for a girl, and is much kinder to the eyes than is retouching. If there is a daughter in the family, and no one who can color photographs, then let the daughter obtain an outfit as soon as possible, and with that and a little practice she will soon be able to increase the family income.

A good density giver for detailful but weak negatives is made by adding a small quantity of dry amidol to any ordinary pyro-soda developer.

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STRIPPING NEGATIVES.

BY "OPERATOR."

ALL photographers have occasion at some time or other to wish that they could strip the film of a negative from its glass. If only they knew beforehand *which* negatives they would wish to strip they could use specially prepared stripping plates. But the need to strip comes afterward, and the photographer feels a little doubtful about it—there are so many unreliable formulæ published which make the work very uncertain. Many of the formulæ contain hydrofluoric or hydrochloric acid, and some of them possess the doubtful advantage of expanding the film.

The negative to be treated should be *thoroughly* soaked. A negative that is dry and hard should be placed in a dish of clean water for several hours until it is altogether soaked through. Then it is placed, while still wet, in a formalin bath: water, 100 parts; pure glycerine, 4 parts; formalin, 30 parts. Leave it in this bath for three or four minutes, gently rocking, and then set aside to dry without further washing. If the negative has just been developed and fixed it may be placed, after well washing, into the bath; but in this case an immersion of about one minute will be sufficient.

When the plate is quite dry it must be coated, preferably twice, with a celluloid varnish. This is made by dissolving celluloid in amyl acetate, to which 20 per cent. of acetone is added. The second coat should not be put on until the first is quite dry, and as the varnish is very slow drying a second coat should not be given for ten or twelve hours. It is a good plan to give the first coat overnight. This film acts as a support to the film to be stripped. When the second coat is thoroughly dry cut all around the film with a sharp knife just inside the edges of the glass. Work one of the corners loose with the blade of the knife, and the film will then peel right off, showing an enamelled surface as it leaves the glass.

If it be desired to protect the gelatine film the negative may be laid, celluloid side down, on some flat support, and fastened so that it cannot curl. Then give the gelatine side a coat of celluloid varnish. These operations mean some time elapsing between the beginning and the end, but it is better to take the time rather than to force matters.

Where "rush" is necessary the preliminary soaking of a dry negative may be dispensed with and the negative instead be left in the formalin bath twelve to fifteen minutes instead of one or four. The drying of the varnish may be hastened by mixing with it a little collodion varnish, but this is rarely necessary.

NEWS AND NOTES.

IN flashlight work it is always best to have the room well lighted when making the flash. It can be done in such a way that the lights do not come within the range of the lens. If the room is darkened the sudden flash of the powder so strains the eyes of the sitters that it almost invariably gives them a staring look, whereas if the room is already well illuminated by gas or lamplight the strain is not so great and the eyes will have a natural expression. Of course, where the room is brightly lighted the shutter must not be opened until the instant before the flash is made, and should be closed quickly after the flash is over.

Daylight Cut Films are the latest introduction on the English market. The system as announced takes the form of films arranged in a pack like cards, special devices being provided for storing and changing them in daylight. If the system is simple and practical in its operation, the new films should prove a strong competitor with the cartridge system of daylight films now generally used among amateurs. Flat films offer obvious advantages in manipulation over roll films, and if the price can be made nearer to the price of plates, there is every reason to believe that the new film will win instant popularity.

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THE late Valentine Blanchard gave a curious hint as to the introduction of accessories into the studio. The velvet curtain and the plush upholstered chair we all know. In Europe, at least, colored daguerreotypes early became fashionable, and a few clever artists obtained high prices. In a short time, however, the tinting of the face was not enough, and the pedestal, pillar, and ample curtain became important additions. Soon it was not enough to convert a plain-backed chair, by the artful use of color, into a crimson-velvet padded one, and to introduce a gorgeous blue sky, with fleecy clouds on one side of the picture and massive column and voluminous drapery on the other; but by the use of liquid gold the sitters were decked in their rings and other finery. When the patent restrictions were removed from the daguerreotype and photographers multiplied on the face of the earth they copied the chair, the curtain, and the pedestal from those who were earlier in the craft. Until now these accessories had existed more in the "after-treating" brush of the artist than in real solidity in the studio of the photographer. But when, later, the stereoscopic craze swept over the earth, colored or other brush work received its quietus. Then everything in the dual portrait had to assist the illusion of reality. That was the golden age of accessory making. Balustrades and balconies, windows, doorways, fireplaces, mantel-pieces—all were added to the studio, and we are not yet entirely rid of them. The day of their usefulness was passed when the bottom fell out of the stereoscopic boom and the chair, table, and curtain came in. But those old accessories cause much heartburning to many worthy photographers ere they mustered courage to get rid of them at any price.

AN English contemporary, speaking of our old friend George G. Rockwood, remarks that few persons realize in the making of a photographic portrait how much the mechanical process must be supplemented by artistic feeling on the part of the man behind the camera — not only the pose, but the ability to bring to the face of the sitter the desired expression not only of the features, but of mind and intellect. In visiting the galleries of Mr. Rockwood many specimens of such work are to be seen. This is due in a great measure to the personality of Mr. Rockwood, who personally superintends the posing of his clients. A man of keen perceptions and strong personal magnetism, aided by years of experience, he quickly divines a person's temperament, and unfailingly knows the moment when to catch the right, but often changing, expression on the sitter's face. To this faculty is due the success of the Rockwood portraits.

Platinum Toning Process. In all processes of toning silver prints with platinum the print after being taken from the printing-frame is first well washed, because the nitrate of silver, by forming chloride of silver, reduces the platinum salt, and toning takes place only to a limited degree or not at all. Cowan by placing the prints in the following toning bath does away with the necessity of washing:

Solution of Chrome Alum (1 : 10) .	16 parts.
Common Salt	2 "
Solution of Platinum Chloroplatinite (1 : 50)	1 part.

The salt apparently changes the silver nitrate into silver chloride, when the toning may be successfully carried through without delay. An alkaline fixing bath should be used to prevent after-toning. The fact that yellowish-whites result seems to be of no importance.

Broken Glass Measures can be repaired by applying a coat of seccotine to both surfaces, pressing them together and letting it dry. The secret of using seccotine successfully is not to use too much. It will resist dry heat or, to a great extent, cold damp, and a glass so mended will stand safely full of water for many hours.

A Printing Hint. Take two stout envelopes (those which have contained bromide paper) and paste them back to back. On one side write prints and on the other paper. This will be useful for keeping the prints separate from the unused paper without the trouble of sorting before toning.

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AMERICAN PORTRAITURE TWENTY-FIVE YEARS AGO

H. Rocher, Chicago

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THREE PANEL PORTRAITS BY ROCHER

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AMERICAN PORTRAITURE TWENTY-FIVE YEARS AGO.

THE illustrations given in this issue of the magazine will doubtless surprise many of our readers in more ways than one. But we are sure that all, old and young in the profession, whether adherents of the "new school" or the "old school," will find pleasure and profit in the glance they afford at American portrait photography as it was done a quarter of a century ago. This was our principal motive in their reproduction. They are typical examples of the portrait work produced in the early seventies. Mr. H. Rocher, of Chicago, from whose studio they came, was at that time justly recognized as a leader in the profession. The original prints are 4¾ x 7⅝ inches (styled Boudoir Portraits) and 6½ x 8½ inches (styled Imperial Portraits) printed on albumen paper, and are almost as brilliant now as when first received from the photographer. The delicacy of the tone gradation, the modelling, soft details in shadows and highest lights, as well as the clever rendering of textures, are necessarily lost in the process of half-tone reproduction. The negatives, as a matter of course, were made by the wet collodion method, and it is worth noting that we have seen nothing in dry-plate portraiture to surpass some of these examples as studies in negative making.

From the view-point of to-day these portraits will doubtless excite many criticisms. Those who have been trained in the severely simple styles now prevailing will find grievous fault in the number and obtrusiveness of the accessories used and consequent crowding of the picture space. There is an amount of reasonableness in this, speaking wholly from to-day's point of view. In Mr. Rocher's day, however, all portraiture was permeated with the idea that the figure should be surrounded by more or less familiar accessories. Photographers have since learned that the figure in itself presents difficulties sufficient for their art and its limitations, and therefore wisely leave out accessories which might distract the eye. It will not be overlooked, however, that in all Mr. Rocher's portraits the figure invariably dominates. In each there is a distinct motive or occupation or interest which centres in the figure. It should not be forgotten, also, that in the Boudoir Portrait the idea was to present the subject as at home, with an indication of action appropriate to home life. This is cleverly managed in the portrait group serving as our frontispiece. We doubt whether many of our leaders of to-day could present a similar subject more attractively or more skilfully.

In some of the portraits the pose is almost painfully obvious. Here again we must remember that the photographer had a distinct conception before he began (as the painter invariably has), and we know how very difficult it is to get that perfect correspondence on the part of the subject which alone can make this method successful in photography. The wonder is not that Mr. Rocher fell short now and again, but that he so nearly succeeded in the face of well-known difficulties from which we of to-day almost invariably shrink. In the arrangement of the draperies, in the lines, and in the disposition of the figure in the picture space the portraits are almost beyond reproach.

There are two important lessons for the worker under the skylight of to-day. Mr. Rocher was a master in the technique of his art. His figures are not only perfect in modelling, textures, light and shade, and other purely photographic qualities, but they invariably show a soft envelopment of the figure which is sadly lacking in modern portraiture. Nowhere does he hide the outline of the figure in a dull, sooty mass of shadow. In every picture he has tried with all his skill to reveal the beauty he perceived in every line and detail. Everywhere we see a recognition on his part that the well-dressed woman will forgive much if the artist will but display her figure and draperies attractively. It was this, doubtless, which made him much sought after as a photographer of women. Looking at his work, or the few examples which we possess, from the woman's point of view (and not forgetting to make allowance for the flight of time and changes in methods), we are strongly inclined to prefer Mr. Rocher's portraiture before that produced by any photographer of the present

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day making a specialty of portraits of women.

There are many other points of interest in the pictures, but we will leave them for our readers' personal enjoyment. At the same time we would like to know how the work is regarded by practical operators facing the women and the conditions of to-day. We offer, therefore, an honorarium of $10 for the letter which best sets forth the interesting points of Mr. Rocher's portraits received before May 1st. Let us have a hearty response. The letter should not contain less than 600 words, but may contain more. If it is illustrated so much the better, but this is not necessary. We reserve the right to publish any letter received, and the letter to which the $10 is awarded will be published in our June issue.

COLOR PHOTOGRAPHY: WHENCE? WHAT? WHERE?

BY JOHN DOUGANS.

ONLY those connected with color or dyeing establishments know what a varied assortment of aniline colors there are on the market—colors as brilliant as rainbow hues, and shades and tints as varied as the reflections of a summer sunset—all produced from the soft, dirty black material we call coal-tar. Imagination has never conceived nor can conceive a more startling transformation; no miracle ever recorded is more wonderful than this fact. And yet there are some who are dubious of ever having color photography in the sense that it will be possible to fix the image as seen on the ground glass.

The probability of ever getting artificial dyestuffs to compete and vie with the natural woods and barks was scouted as nonsense, and the idea of producing them from coal-tar as ridiculous; but, like everything else man wants, when the time is ripe so is the product. So it is, and will be, with photography in colors. Already it is following the universal road—first the wish and need, then the first crude experiments and attempts, mixed with many a promising and attractive idea that switches many off the main line for a time.

Whence, when, and where it will come the writer knoweth not; but ventures the prediction that the chemist, and not the optician, will bring it about. Beautiful and grand as are the results obtained by some of the processes now on the market, they are but optical illusions. The intelligent professional or amateur photographer who is working along chemical lines will one day strike some polyglot, sensitive medicine in which the old sun, as in the case of coal-tar, has bottled up all the colors and tints so temptingly and invariably seen under the focusing cloth.

HANDS ACROSS THE SEA.

IN days gone by the first place in photographic achievement was deservedly held by European photographers. A practical acknowledgment of this is found in the fact that the editor of this MAGAZINE, more than a quarter of a century ago, imported and sold thousands of examples of European photography, urging the readers of this journal to emulate the splendid work of such leaders as Mrs. Cameron, D. O. Hill, Rejlander, Diston, Faulkner, Robinson, Wilson, Salomon, Luckhardt, Loescher & Petsch, and others of the same high rank. The seed then sown has borne good fruit. There are still photographers—portraitists—of remarkable ability in Europe: the names of Hollyer, Annan, Crooke, Werner, Langfier, Barnett, Baker, and others are sufficiently indicative of the high standard maintained in Great Britain. But the fact is indisputable that in the average American portraiture now holds the premier position in the world's photography.

There is no partiality in this statement. We are well acquainted with the output of portrait work in Great Britain and other

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European countries. If the product of any other country equalled or surpassed that of our own studios we would, as in years past, freely acknowledge the fact, and begin anew to urge the American photographer to better and higher things. This is not to say that American portraiture is perfect or beyond improvement, but simply that, taken altogether, it plainly surpasses in the most desirable qualities of portraiture the work produced in Europe.

The statement thus frankly made is called forth directly by the two paragraphs which follow, taken from the current issues of two English exchanges. With regard to the first, we are not further concerned to defend the Lytrit portraits introduced by Mr. Strauss, of St. Louis. Their quality is in itself sufficient justification for the praise given to them here and abroad. But the concluding sentences of the paragraph plainly indicate that our brother of *Photography* is not as well informed as his position demands. As his years increase, doubtless he will grow in wisdom and grace. And our warmest good-will is with him in his apparently honest ignorance.

In the last four sentences of the second paragraph, the better informed editor of the *Photographic Chronicle* points out *why* the average of American portraiture is so high. And we have good reason to know that he is right in his opinion, save in the single slip of his pen imputing a tendency to vulgarity, etc., in American work. The difference in point of view between the two British editors will not be overlooked by those interested. The *Chronicle*, we may mention, is largely a journal for professional photographers. *Photography* is one of the best photographic journals published for the advanced amateur or serious worker. Here are the paragraphs:

Lytrit Portraits (*Photography*).

"Our contemporary, WILSON'S PHOTOGRAPHIC MAGAZINE, in its current issue, observes: 'We notice in *Photography* a remarkably offensive opinion, of which we trust the usually well-informed editor of that journal will be properly ashamed in due time. The paragraph quotes William Marion Reedy's glowing tribute to Lytrit portraits, given in our December issue, and, after a description of the method, says: "The result is a hybrid, which, however offensive to persons of cultivated taste, will, we doubt not, prove immensely popular among the class to which most professional photographers have to look for a living." When the editor of *Photography* knows more about Lytrit portraits, their maker, and the good people of St. Louis, including the gifted word painter, William Marion Reedy, we feel sure he will be quick to acknowledge the crudity of his criticism. The Lytrit portraits sent out by the Strauss Studio embody the highest achievement of a master in the profession, whose portraiture is certainly not surpassed by the work of any European photographer within our acquaintance. As for "the class to which most professional photographers have to look for a living," in America, at least, this class possesses a fairly critical taste, of which the superiority of American photographic portraiture is the best proof.' Our opinion of the portraits was based upon personal examination of a number of them, and remains unaltered. Is not our friend of WILSON'S just a little partial in his estimate of the critical taste of the American public? We cannot help thinking so, as we look at the reproductions of the works of the leading American professionals in his own admirable journal. If this is what they like, well ——."

European Portraiture (*Chronicle*).

"A writer in an American monthly, after making a tour of the studios of Europe, came to the conclusion that 'portrait work in the professional studios of Europe is rather disappointing to the visitor who expects much from the birthplace of photography, and, taken in comparison with the work of American photographers in the same field, the average falls below ours.' In Great Britian he marks out for special approval Annan & Co., of Glasgow, Harold Baker, Histed, and C. E. Fry & Son. Of London photographers in general, he remarks: 'The photographers of London number, I was told, nearly two thousand, and most all suffer from the effect of cheap prices. Photographs can be had for a mere song, and the usual thing is of very poor quality. Bromides and glossy paper, printed in vignettes and mounted on album-

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sized cards, are still in good favor. Carbon and platinum are only occasionally seen in the better studios.' 'Comparisons are odious,' and in nothing more so than in artistic matters. We do not admit that our best photographers are inferior to American leaders, although the two styles of work are different. The British portrait is far more refined and restrained, while American portraiture is inclined to vulgarity and the theatrical. In spite of this the criticism that average American work is above the average British contains some truth. Even keen observers among ourselves admit that within recent years the standard of work in this country has fallen. We attribute this superiority of American work to the monthly illustrated magazines, which so persistently put before their readers specimens of the best kind of professional work. The American photographer has thus always at his command examples of the first-class work that is being done by his competitors, which must react favorably on his own productions.''

THE PURITY OF PAPER.

THE American photographer ought to be very grateful for his deliverance from one of the troubles which has more or less worried European workers—the trouble of impure paper. Paper comes into the work of the fraternity at two points; first, as a support for the sensitive film; and, secondly, as a mount for the finished photograph.

The photographer buying his paper and mounts from well-known houses has always taken it for granted that the papers are pure rather than worried his soul about testing them. And his confidence has not been misplaced. The American manufacturer has always kept faith with his customer and given him stock of an assured purity.

There are cases—occasionally—in which a photographer makes his own paper. The professional sometimes uses—though not as often as he might—plain salted paper, and the amateur is fond of dabbling in paper-sensitizing, from gum-bichromate to the humble blue-prints; and there is quite a probability that the fashion of mounting prints on brown paper, or on colored cover-paper, may grow. The use of judiciously selected sheets of colored paper is already an occasional specialty and may easily become more so. If so, we may find many varieties of fancy papers, made for a general trade, deflected toward photography by manufacturers who have no special knowledge of the necessity for purity. It is then advisable to recapitulate a few of the commoner faults of paper, that the photographer who wants to choose a special brand on which to specialize may be on his guard.

For our sensitive paper we require paper of a reasonable toughness and hardness to stand the mechanical strain of much soaking, etc.—a paper which contains nothing that will affect the sensitive coating, either before or after printing, and which will not fade or change on exposure to light. For our mount we, in a considerable measure, require the same conditions. The first and third ones can easily be told by practical tests; the insidious constituent that makes a print gradually change in the course of weeks or months requires more careful searching for.

There are two factors in paper-making which are commonly and correctly considered as of vital importance—the size and wood-pulp. Size is either animal or vegetable. The animal size is usually gelatine, to which a little alum is added to render it insoluble after drying. The gelatine size may be decomposed if the paper is stored in a damp place—a fault which can easily be prevented—but exposure to light does not affect it. Vegetable size is commercially often made of some resin, mixed with alum. Theoretically this size might, we believe, be rendered innocuous; but in practice the quality used has a reducing property which will tend to cause fading prints, and it tends to decompose on exposure to light. Unless a paper is purchased from some reliable source, it should be unsized, and sized either with gelatine or with starch, which is free from the faults of resin.

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The purest papers are made from linen or cotton—the former gives the stronger paper. Among the many other substances used are straw, hemp, moss, jute, and wood-pulp. This latter is held in much aversion by the photographer. The relation between the photograph and the mount is not so intimate as the relation between the sensitive film and its support, and the photographer who very rightly insists on getting the pure imported article for his support may reasonably, with proper precautions, use a wider choice for his mounts. Wood-pulp is not used for the manufacture of pure white boards, but it is common in tinted boards or tinted paper, especially in boards where the facing sheet is pasted on a body of a different color and quality. In a light-tinted board wood-pulp will turn color on exposure to sunlight. Perhaps the most sensitive test is a solution of one part of diphenylamine in fifty parts of alcohol and five of sulphuric acid. This gives an orange color. Wood-pulp, properly so called, is literally what its name indicates: a mechanical mush of wood. It may be prepared in the form of wood cellulose. This is obtained by chemical action in conjunction with heat and pressure, and in this state is much purer. In paper made from wood cellulose there is probably nothing that will affect a print when pasted down upon it, and certainly nothing to be feared when a print is mounted merely by one edge or by two corners.

The fading action of light is obviously easy to test for. Place a piece of paper in the sun, half of the paper only exposed, the other half covered. If a paper will stand the full sun for a day without a trace of fading it is probably sufficiently permanent, and will certainly stand months in a room or in a folio. The toughness or otherwise of a paper is important. Some paper seems to show an ugly mark every time it is handled, and can never look neat. It is well to keep a sheet of paper "lying around promiscuous" for a few days before choosing it. Paper can be tested in this way by rolling it, bending it backward or forward, buckling it, etc. Although we have shown that wood-pulp paper should be carefully avoided, it would seem that almost any paper of good quality which does not contain it may be used for mounts. There is an abundant supply of such papers.

NOTES ON THE OZOTYPE PROCESS.*

BY ERNEST MARRIAGE.

MANY will remember the fine collection of prints by M. Demachy exhibited last spring at the Royal Photographic Society's rooms, one of the interesting series of "one-man shows." Most of the prints were gum bichromates, but a particularly good one was pointed out to me as being a gum ozotype. Until that time my ideas of ozotype were based upon reminiscences of some experimental prints exhibited by its inventor, Thomas Manly, at the Royal Photographic Society's exhibition in 1899, work which did not commend the process as a "means of pictorial expression," but was of interest as showing a new, if unpromising, method of obtaining photographs in various colors. Evidently the process was more satisfactory than I had given it credit for; therefore, when the Secretary of our local photographic society asked me what he could look to me for to demonstrate in the winter session, ozotype was promptly booked. A short account of my experiences and experiments may also interest readers of *Photography*.

Everything new must justify its right to existence by possessing some advantage over its precursors. At the outset the question is put: What advantage does ozotype offer compared with older and better known printing processes? It is permanent, so are platinotype and carbon; it will give prints in a wide range of color, so does carbon. No doubt the comparison is more

* Reprinted from Photography. We regret that inability to reproduce the half-tone illustrations accompanying this instructive paper compels us to omit the references given of the various effects obtained by variations in manipulation. The supplies needed are now obtainable in America from George Murphy, New York.—ED W. P. M.

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likely to be made with carbon than with any other process. The same colors are obtainable in both, for insensitive carbon tissue can be used as well as the pigment plasters supplied by the Ozotype Company. Perhaps there is not so wide a selection of papers available for ozotypes as in the case of carbons. My short experience tends to the belief that there is more uncertainty with the use of rough papers in the former case, though a smooth Whatman drawing paper presents no serious difficulty. If the finest definition is necessary, carbon is to be preferred. There are the disadvantages of the process—some loss of detail, and possibly limitations in the surface of the paper and final print.

In appearance an ozotype print on smooth paper (the special paper F, supplied by the company) resembles a carbon or platinotype. The surface has not quite the shiny appearance of a single transfer carbon on smooth paper, much less of a double transfer from flexible support. The surface of the print in the lighter tones is as matt as a platinotype, while the deep shadows have a slight gloss which adds to their richness.

In addition to the advantages already given, viz., choice of color and surface, it should be noted that there is no reversal of the picture, with the consequent need of double transfer. A safe-edge is not required, and there is a visible image to guide in the printing—not a strong print-out image, it is true, but one that is as plainly visible as a platinotype before development. The separation of the different stages of the process—first, printing, washing, and drying the print; second, pigmenting the print; third, the development—may be advantageous or not, according to circumstances.

In several ways ozotype possesses a wider range of latitude and greater adaptability than either carbon or platinotype. It is easily practicable to alter materially the scale of gradation in a print, to get a strong print from a weak negative, a weak print from a strong negative. . . .

Apart from the use of cooler water for development, it is possible with ozotype to compensate to a certain extent for errors in exposure. . . Further modifications in the strength of a print are brought about by the selection of a suitable pigment. An over-exposed print from a good negative may be saved by using a brown plaster, sepia, or warm sepia; while under-exposures should be printed in black, so that any detail in the high lights may be strengthened.

It is unnecessary to describe the process in detail. Anyone with a knowledge of carbon printing and the assistance of *Lessons in Ozotype* will be able to learn it for himself. The plant and chemicals required are: A coating brush, ozotype solution, Lepage's liquid glue, copper sulphate, acetic acid, and hydrokinone; two or three of these most photographers will have in the house already. As to the materials, I should recommend the beginner to start with the F paper sold by the Ozotype Co., and sepia or warm black "pigment plasters." The smooth paper suits architectural subjects admirably, and when a good working knowledge has been acquired, rougher papers may be tried for landscapes.

Coating or sensitizing the paper is not at all difficult, and need not prevent any from making a start. The paper should be pinned down at the four corners (a sheet of newspaper underneath) to a table or drawing-board. It is easiest to prepare a large piece of paper, and when dry to cut up to the size required. Do not experiment first of all upon small pieces. That is needless trouble.

Printing is about as rapid as in the case of platinotype paper, and the same negative will be suitable. A good clean negative, which I printed for experiment in October last, required five minutes' exposure in diffused light, between twelve and one o'clock, to give the best results. Seven minutes was too long, but by after-treatment the over-exposure was remedied. To get good detail a good negative is necessary. Detail is lost in securing contrast in a print from a weak negative; on the other hand, if the negative is too strong, it is difficult to get bright high lights and transparent shadows. A print on rough paper should have rather longer exposure. The image is visible and of a fawn color. Printing should be stopped before there is any tinting of the highest lights. The prints may be put away in the dark for subsequent

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washing, or washed at once for ten minutes in running water, and dried. The prints are then permanent; the high lights are clean and white.

The next stage, the application of the plaster, is an important one, as upon the particular treatment now given to the print the photographer depends for regulating the contrast or remedying incorrect exposure. The print and the pigment plaster have to be squeegeed together in a similar way to the carbon tissue transfer paper, but for ozotypes an acetic bath takes the place of water. For good ordinary negatives, the following bath is recommended: Water 40 ounces, glacial acetic 60 minims, hydrokinone 40 grains, to which is added 20 minims of a 10 per cent. solution of copper sulphate. If the contrast is to be increased, the copper sulphate may be left out, or, on the other hand, to diminish contrast, more may be added. During 1900 I made a negative, of which, even with matt varnish over parts of the glass, I was unable to get other than a hard carbon print, but last summer I removed all the matt varnish and made a satisfactory print in ozotype. The heat of the bath is important. It should be from 70° to 75° for smooth paper, and 80° for rough paper. If the bath is cooler than this, a plentiful supply of white specks all over the print will result; a higher temperature will melt the gelatine. It is easy to keep the bath at an even temperature by placing the dish on the top of the developing tank, previously filled with hot water. Always keep a thermometer in the dish, and if it registers more than 80° F. take the dish off and put it down on a table.

Before adding copper sulphate to the acetic bath the prints to be treated should be looked over, and, if they vary greatly in contrast, sorted out. Any prints from weak negatives are put through before adding any sulphate. The addition is then made, and further prints treated, until, finally, those from very strong negatives, requiring the greatest quantity of the copper solution, receive attention.

Earlier in this article I referred to the possibility of correcting over and under-exposure. This is effected by shortening or lengthening the time that the pigment plaster is soaking in the acetic bath. If a print is under-exposed, keep the plaster (not the print) in the bath a rather longer time, say one and a half to two minutes.

Development is similar to the procedure with carbons. There is not, however, the liability to blister. I have taken prints up to 125° without any resulting evil. Imperfect contact between the pigment plaster and the print yields white spots or patches, but there is no danger of spreading as with the blisters produced upon carbon prints from the same cause. Over-exposures should be developed in hotter water; under-exposures flooded with cold water as soon as the defect is discovered. The gelatine image is more tender than in the carbon process. Prolonged soaking in warm water produces more effect upon an ozotype. Local brush development may be used.

There is one point in development in which an ozotype differs from a carbon print. It is possible to obtain two positives from one printing—a reversed positive on the pigment plaster as well as the ordinary print. It is well known that on stripping a carbon print, the first step in development, there is a rough negative image left upon the paper, which originally bore the "tissue," and this holds good also of ozotypes to a certain extent. If an ozotype is carefully stripped, and the pigment plaster, at first bearing a negative image, is developed in water at a temperature of 90°, a rough positive results. This print, in my experience, is lacking in detail and half-tone. It is, however, conceivable that in some cases the print on the plaster might be thought well of. I lately obtained one, which, but for a tear in the paper, would have been submitted to a selection committee. This reminds me of a hint, which shall be my parting advice: Mark clearly the back of the pigment plaster, otherwise you may find yourself developing the plaster, with the proper print relegated to limbo.

When developing in frosty weather, a rubber hot-water bottle, partly filled with hot water, so that the developing-dish can sit level, will keep the developer at an even temperature in the coldest weather.

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The Camera in Tailoring. You can be measured for a suit of clothes by photography now, if you care to have it done in that way.

A Wisconsin man, says the *Herald*, patented the process, which promises to be a boon to tailors, relieving them of much labor, and at the same time securing a degree of accuracy in measurements that is quite out of the question when the ordinary method is employed.

All you have to do is to stand close behind a screen of a peculiar kind, while the tailor puts his own head under a black cloth and focuses the camera upon you. The screen, which, mind you, is between yourself and the camera, is simply a wooden frame with wires strung tightly across it, at equal distances and parallel, so as to form a series of squares.

Necessarily the resulting photograph is cut up by thin black lines into a network of squares, and your measurements are indicated by the number of squares and portions of squares occupied by your body in the picture. With half a dozen such photographs taken of yourself, in different attitudes, it is a simple problem in mathematics to calculate your dimensions all ways.

To make sure that such salient points as the armpits are correctly indicated in the photographs, the inventor has devised a sort of harness that holds the clothing close to the body—thus avoiding the necessity of stripping.

It may be that before long this ingenious plan will be applied to the measuring of women for tailor-made suits and other garments. Thus one of the difficulties of the dressmaking business will be largely done away with, and there will be fewer wrinkles in the brows of properly gowned maids and matrons.

Plenty of Light. This idea of an unlimited amount of light is probably a fallacy. There is no objection to the very reasonable theory that it is easier to block out surplus light than to supplement an insufficient supply. But there are several practical objections which should at least be considered. It is more difficult to build a water-tight glass roof than any other kind, as the greater the area of glass the greater the possibility of leakage. Now a drip, drip, onto a screen or curtain leaves a very unsightly stain. Too much glass means extra cleaning and extra blinds, and every extra pane of glass means more heat in summer and more cold in winter. The idea of all the light possible is one of the many beliefs which we have brought down from the days when processes were used which are now abandoned. The suggestion that it is possible to work without the fullest possible amount of light raises the question of the framework of the glass roof. This has been constructed as light as possible to obtain the maximum of light, and as a result we often find that a studio roof, after a few years, becomes a constant worry.

Bromide Development. In the matter of development bromide paper is not quite as elastic as a dry plate. With the latter we can force for under-exposure, or we can restrain over-exposure; with the bromide we must have an approximately correct exposure. With the bromide, however, we must use a much clearer light than we usually adopt for negative development, and so can watch progress very closely. Several developers are suitable for bromide paper, but pyro is not among them—it is too much given to staining. Ferrous oxylate was long a favorite developer, but it has to be followed by an acid clearing bath, and it lacks any ability to force matters in the case of a print even very slightly under-exposed. Either metol or amidol are good. A good amidol formula is: 4 grains of dry amidol to 1 ounce 10 per cent. solution of sulphite of soda; bromide of potassium, 1 grain. But slight modifications always suggest themselves for different grades or brands of paper. Hydroquinone is scarcely satisfactory, but metol-hydro is a good developer. The moment that the picture is sufficiently developed pour off the developer. If any part seems to lag behind wash the prints, and then locally develop with a brush or finger-tip. Then fix for about twenty minutes in an acid fixing-bath, and wash for a couple of hours in running water.

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COMPOSITE PICTURES.

BY THOMAS WOOD.

I DO not mean those novelties of a few years ago, now happily dead, in which ten ghastly under-exposures of ten different people were superimposed on the same negative or same print. I refer to a picture made by printing parts of two or of any number of negatives into one picture—to the class of work, though in a more humble way, with which the name of Anderson is so closely associated.

All photographers must at some time or other have been annoyed by the non-appearance of some member of a group. Or a group may be taken of a family with one absent member; or a club may not be able to turn up *en masse*, but at odd times.

The simplest composite of all is when the missing factor, dead or away from home, cannot turn up at all. In such case he may be frankly represented from some photograph, as a picture on the wall or on an easel. My method is to arrange the group, and in it include an easel on which rests a white canvas or card—usually enclosed in a frame, but without glass. The photograph is taken, and in the negative the white card is, if necessary, further blocked out. A negative is made from the photograph (making the head—if head only—the same size as the head of the sitters in the other negative), and, by masking, the head is printed into the centre of the frame. As the joinings are limited to four straight lines, even if the picture is not vignetted in the frame, the work is easy. Personally I seldom vignette this easel picture. I find it gives most satisfaction to use quite a large canvas—I use one thirty-two inches in height—and to work up the portrait in imitation—far-away imitation—of a painting. This I do in water-color, either on the original photograph or on the negative, and the work mostly takes the direction of touching in a dark but not quite even background.

Next in order of simplicity comes the case of a photograph being taken in which it is known some sitter must afterward be included. The group is arranged with a space in which the absent member is to be printed. In such cases, too, I mark the floor exactly where I wish him to stand, and I mark the exact position of the camera. If the extra sitter should turn up unexpectedly afterward, I get a picture from the negative and decide exactly where and how he should be placed, sketching the position on the photograph before I make an exposure. Often the figure works in best seated in a chair, or, in the case of a child, on a low stool or on the floor. The printing is done by the usual method of double printing, first printing the group with a space washed out to exactly take the figure to be added, and then printing in the figure from a negative in which everything else is carefully blocked out. I have been told that there is no difficulty in this double printing. That may be so, but only once have I had a printer who could do it. To get an exact register seems to be beyond them, and I must confess that it is a careful work, and occasionally needs a little work on the prints afterward. Where a number of prints are required, I make one careful one, retouch it around the joining, and from this print make a negative. Where prints have to be made and then rephotographed, I always use a plain salted paper, but a platinotype paper would fill the bill equally well. I use the thinnest possible paper, as with it it is easier to blend cut edges.

When more than one figure has to be added I always make a pasted-up print, and then rephotograph this. There need be no masking here. The print which forms the basis is first made, and on this the others are carefully pasted in position, and then worked around to merge the separate parts. It requires a very steady hand to cut out these figures—a variation of a hair's-breadth may spoil a nose or an ear. I found that with a very sharp-pointed knife I could do better than with scissors; but my daughter with scissors can do better than ever I could. I have done a fair amount of this kind of work for newspapers which want a picture which ought to be drawn, but which appears more "truthful" if in the guise of a photograph. I have not found editors more

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lavish than other mortals in their bill-paying, but with them much cruder work will go, for the half-tone process is merciful to fakes.

Where a purely built-up picture has to be made from many separate sittings I always wish to learn all possible particulars beforehand, and then I design the picture as I propose to finish it. It is necessary, too, to know who are officers or officials, that they may be given a prominent position. In a group, especially an imitation outdoor group, I like to get the camera as far as possible from the sitter! As I have a large studio, which can be made still larger by backing the camera down a short passage, I have just purchased a telephoto lens to try on this work. The perspective of the figures need not be too much emphasized. In a "stand-at-ease" photograph I make them all appear as nearly as possible equally distant from the camera. When it is a parade I generally take it "sideways on." In any case, however, I keep the figures fairly even in scale, and by this and by my sketched-in background suggest that they are some distance from the camera. The negatives—I use salted paper—are developed fairly plucky, and by intensification or reduction, where necessary, I endeavor to get them as even as possible. I endeavor to make all the prints in one day, and put them through the finishing in a batch. The wish is to get them all as even as possible, and any prints which do not agree with the rest should be discarded and others made instead. The prints should be left between blotters until they are quite dry.

After the portraits are all cut out I arrange them on a large sheet of gray cartridge paper until they look to the best advantage. Then I transfer them to the white board on which they are to be pasted. When I again have them satisfactory—they don't look as well on the white, and that is why I first arrange them on gray paper—I lightly run a pencil around each to mark the position. Then on the card—which is mounted on an architect's drawing-board to prevent any warping—I sketch the background lightly in wash. Then I mount the prints, one by one, with starch paste, and when they are in place finish the working up, placing rocks beneath the sitting ones, etc. I keep the background as distinct and unbroken as possible. Where some scene is required, and where the photographer has no skill in sketching, a very faint bromide enlargement will give a good groundwork. It is, of course, impossible to get perfect results in this class of work. Everybody naturally wishes to be taken full face, and so profiles are few. In one picture where backs were necessary—two officers facing their men, and the men facing the camera—I duly photographed and used the backs, but made second portraits of these officers, and introduced them a second time as marching beside their men.

I like to take the portraits larger than in the final prints, as the reduction in size when photographing the composite picture considerably helps the appearance of the print. This should not be neglected in the preparations.

WHAT DOES THE DESIGNATION C. P. MEAN AT PRESENT?*

BY LYMAN F. KEBLER.

C.P. in the chemical world undoubtedly meant, as it should to-day, a chemical of very high purity. But the expression as used at present by the chemist, the pharmacist, the physician, the photographer, the broker, etc., may mean almost anything from a chemical substance of high purity to one of very secondary quality. For ample evidence of the latter it is only necessary to read over the advertising portions of some of the journals, where can be seen some of the absurdities of the designation C.P. For example, one manufacturer advertises chemically pure tar.

That the designation C.P. may mean chemicals of ordinary purity can be seen by the following: An order was placed for C.P. zinc chloride and C.P. sodium bisulphite, two very difficult chemicals to make

* A paper read before the chemical section of the Franklin Institute and reprinted from the Journal of the Institute.

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even of a fairly high degree of purity. What was wanted in this case were articles of good quality, "commercially pure," if you please.

Nearly all manufacturers of glycerine mark their best quality C.P. and deliver it in iron drums supposed to be galvanized inside. If such glycerine ever was C.P., it certainly cannot be expected, in many cases, to remain so very long under these conditions. Some C.P. drum glycerine contains iron to such an extent as to render it unfit for use in mixtures which contain carbolic acid or similar chemicals. As a matter of fact, very little available glycerine answers even the U.S.P. requirements, to say nothing of C.P. These glycerines almost all contain fatty acids and substances which reduce Fehling's solution.

The photographer needs most of his chemicals of a very good quality. To many of the druggists and physicians U.S.P. and C.P. are synonymous, and the writer has met with persons whose only criterion for C.P. was physical appearance or a certain crystalline form. The interchanging of C.P. and U.S.P. in this way may have some *raison d'être*. The Pharmacopœia requires in a number of cases a purity of 100 per cent., which must of necessity carry with it absolute purity—a condition very rarely met with. The above authority is however, somewhat, inconsistent about its 100 per cent. purity, as the following will show: Potassium bicarbonate is to be 100 per cent. pure, yet there is allowed a limit of *iron, chlorides, and normal carbonate*. Even Rochelle salt is expected to be of the above high degree of purity, but here again a limit of chlorides is prescribed.

In looking over Merck's Index for 1896 we frequently see a chemical of the same degree of purity marked both C.P. and U.S.P. A little further on the same chemical, probably of a higher purity (usually doubled and trebled in price) is marked "Guaranteed Reagent." Under these chemicals marked G.R. there is generally given a series of limit tests. For example, silver nitrate, which the present Pharmacopœia requires to be 100 per cent. pure when furnished as G.R , is permitted to be contaminated with a limit of inorganic matter. How the designation C.P. must have fallen from grace, if one of the foremost chemical manufacturers treats it with such contempt. But this is not all. The June number of Merck's Report marks only two chemicals C.P. and a slightly larger number U.S.P. These abbreviations have all been replaced with such terms as regular, pure, superior, and highest purity. Other large chemical manufacturers, like E. de Haen, Gehe & Co., Boehringer & Söhne, and others, have all generally dropped the time-honored C.P. from their price-lists. Several firms in this country still use C.P. very freely. Exactly what meaning it has to them is hard to say; for example, in one price-list is quoted sodium carbonate crystallized C.P. and sodium carbonate dry, absolutely C.P. The same list contains magnesium oxide C.P. free from sulphur, and zinc oxide C.P. free from manganese. These two chemicals are used in the estimation of sulphur and manganese respectively, and while other impurities may be present, those specified above should be absent. Of what value is C.P. in such cases?

All chemists are very well aware that it is practically impossible to make an absolutely pure chemical in any quantity. Every investigator of atomic and molecular weights has encountered the difficulty of preparing absolutely pure material for his work, even in small quantities. Even the time-honored arsenic-free zinc is hard to be secured. Most of it contains a trace of arsenic by the Marsh-Berzelius method, when permitted to act for a considerable length of time, and allowance must be made for the presence of the impurity in toxicological work.

The writer would like to see a set of standards or system of abbreviations established for chemicals and chemical compounds, so that upon proper designation the same quality would be furnished when and wherever called for. This would require the co-operation of those engaged in the various chemical industries in formulating requirements of purity for the chemicals used by them, paying attention not only to the impurities, which would interfere with the use of the chemical, but also to impurities allowable because of their non-interference.

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HOW THE "DENVER LIMITED" WAS PHOTOGRAPHED.

THE story of how the Burlington and Union Pacific Railroad secured an instantaneous and continuous photograph of the famous train known as the "Denver Limited" and carded as No. 1 is interesting. For nearly a year the company made repeated but abortive attempts to get a really good photograph of the Limited in motion. From Chicago to the Mississippi the pace is strenuous to a tense degree, being a trifle over seventy miles an hour on certain stretches. After many futile efforts to secure the required picture the task was delegated to a young photographer named Allen Ayrault Green, of the University of Chicago. Mr. Green is an enthusiast in the line of his art. He made frequent trips out on the line to acquaint himself with the motion and swings of the Limited while running at high speed. Thinking it was a simple task he began work with his camera, but the first pictures taken were failures. Then he began studying out the details of the speed of the train and the motion of the camera shutters. Assuming the speed was sixty miles an hour at the point where the picture was to be taken, it was plain that 5280 feet would be the speed per minute, or 88 feet to the second.

Hence, with a shutter working at one-hundredth part of a second, that being the rapidity of the best cameras, the train would move about ten and six-tenths inches during the interval of exposure, and unavoidably give a blur to the picture. He applied himself to the work, and finally succeeded in devising a shutter which would work at a speed of one-thousandth part of a second. This was ten times as rapid as the previous movement, and allowed the train to move only a fraction over one inch. This would operate, he assumed, to give the picture with sharp and well-defined outlines and overcome the obstacles encountered with a slow-moving shutter, and on decreasing the angle at which the camera set the movement on the plate was constantly reduced.

But his troubles had not ceased. How could the thought of pressing the bulb of the camera at the proper time proceed from the brain and be transformed into voluntary action in time to catch the train on the centre of the plate while the speed was eighty-eight feet per second? He trusted to luck several times, but meeting with poor success he decided to apply electricity as an agent to give simultaneous action to the shutter, and finally he completed a machine or apparatus which, while simple, overcame the difficulty.

The device comprised an electric switch, which, when connected to the rail, closed the circuit on being struck by the forward trucks of the flying engine. This switch communicated with a metallic circuit to a set of dry cells, and thence to a shutter release. This was enclosed in a complete machine, consisting of a pair of low-resistance coils acting as electro-magnets in closing the circuit and attracting the armature. The latter communicated with a series of levers so constructed as to minimize the resistance of the stout string it was to release.

Then, in working out the problem, Mr. Green assumed that the camera was set up and focused on the track, good judgment being used as to the length of the train, and the switch put in place about six feet behind the spot where he desired the front of the engine to appear on the plate. A slight knowledge of electricity will readily show that when the engine struck the switch it closed the circuit, and instantly the electricity communicated with the high-speed shutter, and the picture was accurately registered on the centre of the plate.—*The American Inventor.*

PROF. MILNE'S apparatus for the photographic recording of earthquakes, as applied in seismology, is described in a recent issue of the *Photographic Chronicle*. It consists essentially of a delicately poised pendulum, free to swing in any direction, to which is attached a reflecting mirror. A beam of light is directed on the mirror, and thence to a sheet of sensitive paper. The slightest vibration of the pendulum is thus recorded photographically. Thus photography further establishes its claim to be the handmaid of all the sciences.

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PRACTICAL ADVERTISING.

The Kind that Brings Business.

BY CHARLES P. MARSHALL.

NO. 6.—AD. RATES, CIRCULATION, ETC.

It was my purpose to take up the subject of type and borders in this chapter, but there have been so many inquiries relative to rates and circulation that I felt it a duty to devote the entire space to these. Type talks will appear later, fully illustrated.

To reach all possible purchasers is the object of advertising.

If a certain medium (newspaper) covers that portion of the field you wish to reach, you must use that medium and pay their price—provided the cost is not in excess of the possible pulling power of your advertising.

In circulation quantity and quality go hand-in-hand—one balancing the other. Big circulation may have poor quality of readers, and a medium of good quality may have a small circulation.

What you pay for space should be determined by the *number* of people reached and the *kind* of people reached.

If a newspaper has poor pulling power from lack of circulation or quality it has nothing to sell, and is expensive at any price.

Publishers of papers of note or reputation know from experience the value of their space, and charge accordingly.

Remember, the newspaper that refuses a candid statement of its circulation has usually but little to sell in the eyes of experienced advertisers. Yet many publishers persist in this unbusiness-like way—bolstering their argument with declarations of "advantages (?) of exclusive circulation and high-grade literary quality," which counts for little. *It's the masses most merchants must move to make money.*

What would you think of a clothier who kept his stock out of sight and gave as the excuse that the goods came from So-and-So's—were bought by Senator So-and-So, Judge This and That, etc., and were genuine bargains at such and such a price—and insisted on selling you a suit; wanted to do it up behind your back—take your money or note, you to examine them only when you had them home?

May be they'd fit, most likely not!

If a publisher won't show his goods—circulation—deal with him cautiously, for there's a nigger in the fence somewhere, generally a padded list, or a poor one.

Good newspapers (where quality and quantity balance) command good rates; and when you buy their space you buy something tangible, a direct message to prospective customers, put directly into their hands.

In two or more newspapers of equal merit use the one with the lowest rate, provided it will cover the field.

An ad. in one good newspaper at good rates costs less in the end and does better execution than half a dozen ads. in as many poor (small circulation and cheaply edited) newspapers.

The success of a campaign in the advertising field depends upon the same element as that of a battle-field—*i. e.*, one good general is better than a corps of common corporals.

Again, any rate is dear if you have no use for the newspaper or medium. It's like filling your attic with balloons at 10 cents apiece if you never intend to make an ascension.

When you buy space ask for the sworn paid circulation. Many papers — large dailies—print way in excess of their sales. They issue so many thousand, but a percentage of that flattering number is returned and credit given to the newsdealer, who cuts off the dates and mails them to the office.

Buy your space by the year (not by the week or month), because you then secure the lowest possible rate.

Buy your space by the year, because the publisher will give you a better location.

Buy your space by the year, because the publisher will watch your interests closer, occasionally giving you a "write-up" or free "local."

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Buy your space by the year, because you will not be tempted to run your ad. a "while," then cut it out for a while. The publisher won't stand the *intermittent fever*. The man who practices "in-and-out" advertising is looked upon as an experimenter and not sure of anything.

It is hard to persuade the new advertiser he must keep his ads. going. He has an itching desire to stop the ad. and "see what happens," which is generally this: The ad. has lost its momentum; its flying start; when it reappears there is much doubt as to the genuineness of its statements.

Advertising pays if you do it right and keep it up!

Remember this—consider advertising in its true light, as an advertisement—not pure expense to go to the evil side of the ledger, and make your appropriation as large as you can, and sustain it by the year.

Again, the man who advertises regularly is looked upon as a progressive, successful business man by his brother merchants. There's a good deal in appearance; and when other business men endorse your movements you are increasing the pulling power of your ads., because indirectly these merchants bring you trade. How can they help but speak well of you if you are qualified and practice in the studio what you preach in the papers.

It should be the pride of every studio to have some sort of an ad. running constantly. The oftener the ad. is changed, the more pulling power; the better the ad. is written, the more pulling power; the better the ad. is displayed, the more pulling power; the more readers, the more pulling power; and the more-pleased customers from practising what you preach, the more pulling power!

A man should take as much pride in having his ad. in the paper as he would in having it in the directory. If it were omitted from the latter, there would be more than "gnashing of teeth."

Many a photographer unthinkingly spends enough money on unnecessary accessories and fantastic backgrounds to go a long way toward a year's good advertising.

"Can't stand the newspaper rates—cost too much."

So it would were you dealing in full pages, halves, or quarters, but a modest-sized space is practically in reach of all progressive studios.

Let's face figures for a moment.

In a city of average size, the average rate for advertising in a daily newspaper is $2.50 per inch per month. This is 8⅓ cents per inch per day. A respectable-sized ad., 4-inch double column, will cost 66 cents (a trifle over) per day to reach 11,000 people, the sworn circulation. This means that it only costs 6/1000 of 1 per cent. to reach each subscriber, or five times that number of readers.

Why, to mail one batch of circulars alone to such a list would cost for postage $110, aside from cost of printing and time to fold and direct. And yet some say they "can't afford it." And you can't afford it if you do not take advantage of it. Make the studios shine—change your specimens often; hold an occasional exhibition; have an opening; invite the people in; talk of your pictures whenever opportunity occurs, and see to it that you make it occur. Originate new styles, show your pictures in public places, dress well, and walk the street with the spirit of success shining on your face. But if you let your ad. run, and never support it in studio and spirit, thinking the ad. has some magical power to do it all, you might better have given your ducats to the poor than to the printer.

It's a question of activity all along the line. Hustle, not bustle, brings business!

And still some city studios say, "We can't afford to pay $5 per week to a *newspaper*." Perhaps not, but they never begrudge the same sum to some roustabout to come in and scrub the floor.

Now glance at the weekly papers in the small towns. Their rates are somewhat higher considering the field covered. On the other hand, the weekly is more thoroughly read than the daily. There is more leisure among town and village people than their city cousins, hence from the family-head to the hired-man the weekly is *read* and *believed* from bow to barnacle.

The average weekly charges about 67½ cents per inch per week. A 4-inch double costs 64 cents per week, and reaches 1600. This, in other terms, is 4/100 of 1 cent to reach this nice little number.

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Send a set of circulars to the same list, and it costs $16 for postage, about $3 to $6 more for printing, envelopes, and directing.

Don't you think that 64 cents is rather a modest price to have a business sermon preached to sixteen hundred souls?

You have paid the printer a penny, and he has printed and placed your ad. in the hands of *twenty-five subscribers!*

The photographer in the small town should not murmur because his city brother secures more circulation for the same money. Are not the latter's expenses higher in everything else? The country printer cannot afford to set his ads. for less, because he hasn't the organized force of the city daily. On the other hand, the country editor is, as a rule, a most obliging soul. He never grumbles because copy is turned in late, and often stretches the space to accommodate "plump copy" and makes no charge. While the city editor is directing his forces by 'phone and wire, he is hurrying to "make-up" the sheet at midnight, perhaps, or is "sticking" type because one of the boys didn't show up after supper.

But look, next summer, he has his innings. While the city editor nibbles dried-up green peas and stale strawberries at *table d'hôte*, he sits at his own humble board, fragrant with delicious marrow-fats and luscious fruits from his own vineyard.

Nothing is too expensive (not even advertising) if it brings results.

Next month I shall have something to say on circulars, booklets, and other mediums.

THE PHOTOGRAPHY OF RAPIDLY MOVING OBJECTS.

A SUBJECT of much attention to Smithsonian scientists are the recent experiments made in this country and Europe in the matter of photographing objects moving with great rapidity. The principle on which such photographs are made is as follows, from the Washington *Times:* The light is furnished by an electric spark, which, though it gives sufficient illumination, yet lasts so short a time that even a rifle bullet cannot move an appreciable distance during the time that it is in existence. In other words, the bullet, passing by at the rate of about 2100 feet a second, is rendered comparatively stationary by being brought into contrast with an electric spark moving at an infinitely greater rate of speed. The success of the photograph depends upon the inconceivably slight duration of the spark of light, which does not permit the object to move on the plate.

Some interesting specimens of these instantaneous photographs are furnished by a series taken of a cat held by its four legs in an inverted position and allowed to drop. The cat, as everybody is probably aware, seems to do that which is known to be dynamically impossible, namely, on being dropped upside down to turn around after being let go and to come down the right way up. The process can be followed by means one of the so-called multiple spark photographs.

The apparatus by which a photograph of a very rapidly moving object may be taken is remarkably ingenious, and the spark which gives the flash-light is produced by means of a revolving mirror. Everyone is aware how, by a turn of the wrist, one may reflect a beam of sunlight from a piece of looking-glass so as to travel up the street at tremendous velocity.

If, instead of being moved by a mere turn of the wrist, the mirror is made to rotate on an axle by mechanical means at an enormous speed, then, just as the rotation is made more rapid, so will the beam of light travel at the higher speed. A revolving mirror can be mounted so as to run at the enormous speed of 1000 turns a second. The light from a spark is focused by this mirror upon the photographic plate. To cite a specific instance, the revolving mirror, when made to turn only once to a second, caused the spot of light to travel at the rate of 250 feet in the same time. When, however, the mirror turned on at its full speed of 1000 times a second, the spot of light travelled 1000 times as fast also, or about 250,000 feet a second, or 160,000 miles an hour, a speed which was 200 times as fast as that of the rifle bullet.

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SITTERS WITH PECULIARITIES.

BY F. STANARD.

We find our knowledge most taxed when we have a sitter who has some peculiarity which it is not required to emphasize—often rather to suppress.

The stout sitter is one of our tact-testing subjects. She must, if anything, be flattered; she does not usually demand an impossible feat, but she does expect the photographer to do his best—if he does not she does not approve the portrait. A fatal mistake of many stout people is a tendency to tightly fitting clothes. All photographers know how much better results can be obtained with loose sleeves than with tight ones. If it is a case of head and bust only, I bring the camera as near as possible to the sitter; this seems to have a tendency to make the face less fleshy. If a full length is required I always prefer a standing pose. If possible, I let the sitter lean slightly forward, the face raised, and the lens about on a level with the neck. This tends to lengthen the neck, which often is short. In some cases where the dress allows it, the train of the dress may be brought in front along the floor toward the camera. By this means the apparent height may be very flatteringly increased, and of course with such a dress a low stool may be used to stand upon. I once used a stool barely two inches high in conjunction with a deep imitation grass rug. I have a couple of diminutive chairs and a little table which has had a couple of inches sawn from the legs. These are very useful with many small stature subjects—stout or otherwise—and I prefer to trim such pictures three-quarter length oftener than full length. But accessories are more often used where the figure is not plump. In the latter case I trim the print very narrow when possible; it helps to suggest height.

Normally a man is taller than a woman. I think there are more tall women than there used to be; and a married couple in which the husband is the shorter is not unusual. Such subjects are not difficult to handle, but the photographer must not suggest the correct relative heights. I have heard it advised to stand the husband on a stool, and then trim the print so that the feet don't show; but it would seem to be better to achieve the end without thus calling attention to it. I use a couple of chairs of different heights, or one upright and one lounging chair, and try to get a more or less profile *tête-à-tête* picture. Or let the lady be seated while the man remains standing.

I have known photographers complain when sitters who have some peculiarity—say, thick lips, or large ears—complain that they do not like their pictures. It is possible to emphasize any feature and equally possible to keep it within range. By a change of pose, or a modification of the lighting, the objectionable feature should be made as little prominent as possible. I have not referred to the retouching pencil in these few notes. It is a very useful finishing touch, but though used to correct facts it should not be used to correct faults of operating, but rather to supplement operating when that has done the best it can.

PHOTOGRAPHIC RECORD WORK.

At a recent meeting of the Photographical Section of the Franklin Institute, Philadelphia, Dr. Charles F. Himes in the chair, the Committee on Record Work, appointed in accordance with the resolution adopted at the stated meeting of the Section in May last, respectfully reports that it has held several meetings and decided to recommend the following plans:

While photographs of any convenient size will be accepted if satisfactory, it is recommended that the 5 x 7-inch plate be chosen whenever possible.

As it is expected that albums will be provided by the Institute, prints should be sent in unmounted and properly trimmed. Except in special cases duplicates are not to be sent.

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It is proposed that a supervising committee, chosen in some way that will secure the full representation of the Section, shall have charge of the acceptance of pictures and their arrangement in the albums or elsewhere.

Pictures become the property of the Institute, unless specific arrangements otherwise are made.

The committee offers the following classification of subjects, suggesting that the arrangement in the albums or elsewhere shall conform to the system.

CLASSIFICATION.

(1) Machines, implements and scientific apparatus, especially those passing out of use, including manipulations in manufactures and trades.

(2) Transportation by land and water, ancient and modern.

(3) Buildings, bridges, and other useful structures, illustrating methods of erection.

(4) Buildings of historic interest, particularly scientific institutions, to include important ancient landmarks liable to be torn down.

(5) Portraits of distinguished men who have made important contributions to the sciences and mechanic arts.

(6) Documents of historic or public interest, including those of a scientific character.

(7) Catastrophies and incidents of public interest.

The committee has considered the question of albums, and submits various samples for the examination of members.

HENRY LEFFMANN,
U. C. WANNER,
J. W. RIDPATH,
Committee.

The question of the size of the plate to be adopted as standard was considered. Mr. J. E. Ives called attention to the fact that the 5 x 7-inch plate was the largest in general use by amateurs, and thought it would be advisable that the 6½ x 8½-inch plate specified in the report be changed accordingly. On Dr. Leffmann's motion, numerously seconded, this change was unanimously approved.

The committee's report, with the above amendment, was then adopted.

Specimens of albums made to embody the committee's views were shown by Mr. Ridpath, and were freely criticised by the members.

The chairman presented for the album several prints of historical scientific apparatus, to wit: Dr. Priestley's original burning glass, with which he had made the discovery of oxygen; Priestley's air-gun, and other interesting subjects. He called attention to the desirability of having the descriptive matter appended to such records as full, though concise, as possible.

On Dr. Leffmann's motion, the Special Committee was instructed to proceed with the preparation of a record album which should embody the suggestions brought out in the discussion of the subject.

A SIMPLE MEANS OF PRODUCING MICRO-PHOTOGRAPHS WITH AN ORDINARY CAMERA.*

BY W. FORGAN.

So far as known, no description seems to have been published of any apparatus used for producing micro-photograps, except that used during the Franco-Prussian War for copying on a very small scale newspapers and documents to be sent outside Paris by pigeons. It was an elaborate and excellent instrument for the purpose. The object now is to show how anyone in the possession of a camera may produce micro-photographs by means of a very simple accessory. Probably very few are interested now in looking at these small pictures; and there are still fewer, it is believed, who know how to make them. When collodion was introduced by Mr. Scott Archer as the medium for more rapid photography, some time in the fifth decade of last century, it became possible both to make very small copies of large objects

* From the Proceedings of the Scottish Microscopical Society.

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and to produce enlarged copies of small ones. It was at first proposed to distinguish these two different forms by the terms "alphagraph" and "omegraph;" but the late Mr. George Shadbolt, while editor of the *British Journal of Photography*, suggested the terms "micro-photograph" and "photo-micrograph," and these latter terms have been universally used to distinguish the two forms from each other ever since—the term micro-photograph being invariably applied to small photographs of large objects, while the term of photo-micrograph is used to signify a large copy from a small one. Notwithstanding this general consensus of opinion, however, it is found almost daily that the two terms are used indiscriminately to signify an enlarged copy from a small object. Medical men seem to be peculiarly prone to get confused by the two terms.

The camera to be used for the production of micro-photographs should be one with a rigid front, or capable of being rigidly fixed in that position, while that portion carrying the dark slide should also be capable of being rigidly fixed in the position it is to occupy while the photograph is being taken. The old form of box-camera would seem to be the very best form for this purpose. The flange in the camera front, used along with the accessory referred to, was that taking the Ross portable symmetrical and other lenses having the same size of screw. Into this flange there was screwed a thick drawn tube, such as is used for telescope eye-tubes, the tube being as large as the aperture in the flange would admit of. A ring was soldered on the outside of this tube, which was screwed to take the screw in the flange. The tube entered inside the flange about two inches, and was sprung at the end inside with cuts resembling the letter T placed horizontally. The other end of this tube or jacket was cut with an inside screw of 50 threads to the inch. Another piece of telescope drawn tube was selected about 6 inches long, which was made to slide easily in this jacket by grinding the two together with rotten-stone and oil. A ring about a quarter of an inch broad was soldered outside within an inch from the other end of this last-mentioned tube, and this ring was also cut with a screw of 50 threads to the inch, so that when this tube was placed inside the jacket and turned around, it could be made to approach or recede from the sensitive plate in the dark slide by a very minute quantity. To enable this to be done easily, this tube had a ring soldered onto its extreme outer end, fully half-inch larger in diameter than the tube. This ring was knarled on the edge, which enabled the fingers to grip it without slipping, while the inner end of the jacket, being sprung, enabled the tube to be rotated by means of the fine screw motion without the least apparent movement of the image on the screen while focusing. The inner end of the inside tube had the universal microscope screw to take the object-glasses to be used. Both of the two latter mentioned screws should be carefully and evenly cut, no drunken threads being permissible. Of course, the tube was blackened inside, and a stop placed to prevent reflection of light from the sides. This accessory is really a very simple piece of apparatus, and easily made. The dark slide used was a single one. A carrier was made to fit it, having an aperture in the centre to take plates the size of a quarter-plate cut into twelve pieces. One of these plates was taken and obscured by grinding all over one side with fine emery. This was used for rough focusing, while another was taken and obscured by grinding the outside portions of one of the faces, leaving about half-inch square in the centre untouched. This was coated with a very thin film of virgin wax, and was used for fine focusing. This wax film makes probably the best screen for fine focusing. The glass is rubbed over three or four times with a corner of the wax, gently heated over a lamp, and then spread with the point of the forefinger. Due care is taken to see that the small picture is in the centre of the focusing screen, and that no adjustment for collimation is necessary. The negatives to be copied were quarter-plates illuminated by a four-inch condenser placed immediately behind them, and in almost close contact with them, their distance from the camera being regulated by the size of the micro-photograph desired with each object-glass used. It was found that with artificial light no other method of illumination would suffice to

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give an evenly lighted copy. The objectives used were Zeiss 75 mm. and 35 mm. apochromatics. The lamp used was an ordinary paraffin lamp with a half-inch wick placed in the focus of the condenser, and with such a light it was found that with Ilford ordinary plates, and the negative nearly three feet away, using these objectives, an almost instantaneous exposure sufficed. Everything being ready, the picture is roughly focused by the movement of the camera itself, while the fine focusing is done by the rotation of the tube in the jacket by means of the fine screw. A focusing glass having considerable magnifying power is necessary, owing to the smallness of the picture. The camera may, of course, be so made as to take any size of plate, but it was found that those used were perhaps the more convenient of all, and although not transparency plates, good results were obtained. It will be seen from the above that no focusing screen on a separate frame was used, the focusing glass being carried in the dark slide itself, and removed each time the sensitive plate was put in, thus preserving the perfect register obtained. Probably those who make it their business to do this kind of work may have very perfect and expensive and rigid forms of apparatus; but the above accessory, when used with a somewhat rigid form of camera, does give good results in the hands of a careful worker.

SULPHITE OF SODA.

BY E. G. GRAY.

THE use of sulphite in a developer is merely as a decolorizer. It is used to control the color of the negative by bleaching or freeing it from the stain produced by the developer oxidizing when in solution, which stains the film. The sulphite most used is sulphite of soda, but several others may be substituted. Whatever is used the active agent is the same—sulphur dioxide—and the value of the chemical salt chosen depends on the amount of this substance which is present.

Photographers have repeatedly been told of the necessity of keeping their sulphite in good condition. By exposure to air the sulphite becomes sulphate. Not much difference in spelling, but very different in action. Not only is the value of sulphate as a decolorizing agent *nil*, but it actively introduces a new factor, for it acts as a restrainer to pyro. Crystallized sulphite of soda should contain 27.4 per cent. of sulphur dioxide. I have bought it from a "reliable" house containing less than 20 per cent. This is difficult to avoid, for even in a well-stoppered bottle a certain amount of sulphate will form. This is formed by oxidization, due to exposure to air, and it takes the form of a dull opaque coating to the separate crystals. As this forms on the outside and gradually eats in, the centre of the crystal remains pure the longest. Sulphite which is thus coated should be placed in a basin or cup of water and swirled around. It may require two or three lots of water, but the coating will soon wash off, leaving the pure, clear crystal. Dry this as quickly as possible between blotting-paper. The mere opening of a bottle will let air to the sulphite, and so it will gradually deteriorate. Those, therefore, who use only small lots should always wash it as they draw near the bottom of the bottle, even if at the time of purchase the purity of the chemical was beyond reproach.

The best preservative of sulphite of soda is sulphuric ether; but it is not to be commended to those who are constantly using sulphite.

Many samples of sulphite are slightly alkaline. This is due to the presence of carbonate of soda. Sulphite should be quite neutral, and an alkaline sample should be neutralized, when in solution, by adding citric acid until a strip of blue litmus paper just turns red.

There are several substitutes which are occasionally suggested. Sulphurous acid at its best does not contain as much sulphur dioxide as does sulphite of soda; and as it is very acid it requires much extra alkali to neutralize it. These are two positive disadvantages, and it has no advantage

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to balance them. Acid sulphite of soda should contain more than twice the amount of sulphur dioxide present in the neutral sulphite; but pure acid sulphite is a creation of the laboratory rather than an article of commerce. What is sold is by no means the pure article, and its constitution is so uncertain that it is not wise to use it.

Metabisulphite of potassium is, when pure, more than twice as efficient as sulphite of soda as a preservative, but it is a strongly acid salt. Where carbonate of soda is the alkali metabisulphite will need more than its own weight (about one-third more) to counteract the acidity. If an acid preservative is used it neutralizes the developing power of the alkalies—the accelerators—and so destroys their value, therefore the need of the extra quantity of alkali.

CRITICISM.

BY R. BROWNELL.

If the successful photographer is asked as to the causes which have helped him he will invariably include, and often give a prominent place to, the hints and advice of his friends. He is right; the suggestion from one who has understanding to give it is a very necessary part of our education, and happy should be the man who can claim it.

Just think about this same advice. The result of it is to help the photographer to better work, and therefore the logical conclusion is that the work has faults, and that these faults have been pointed out. The work may not have been cursed or condemned, but it has not been flattered. The man has had a sitter in his studio, and he has done his level best. The sitter is pleased with the result—so is the photographer. The friend—the brother photographer, probably—looks at the picture. He has not been concerned in the manufacture of it, and so is better able to see at a glance if anything is out of gear. As a photographer he may appreciate the work and thought which has been put into the print, but as a "candid" friend he puts his thumb over one spot in the print. It may be that the producer of the print at once notices the fault, or there may be some discussion on the point. More than possibly, it will be decided that after all the fault is no fault. In any case the discussion settles the point, or at least leaves it simmering in the photographer's brain to be finally decided later. And so, if it was a fault—and often enough the protographer decides that it is—it will not run through his work until the end of things.

How many photographers are there who do *not* welcome that kind of advice commonly called criticism? Very many; I almost fear a very large majority. How common it is to be shown a picture—or a score of pictures—by a photographer who asks your opinion when he means that he is fishing for flattery. It is a rather puzzling attitude. It would have been thought that a photographer would have welcomed rather than resented criticism. And doubly so, since it can scarcely be denied that the inertia of thousands of photographers as to the quality of their work is one of the leading causes why so many of them are in an insecure position; in dread of the other man and in hatred of the amateur.

Criticism is not always an easy thing. Very often a man's work would require an essay to point out what is the matter with it. For sometimes a man will show work which plainly says that he has attained a fair proficiency in the technique of photography, and yet has not grasped the most elementary meaning of picture-making. How can you tell him such a knock-down fact without making him angry?

Have you read in Wilson's the proceedings of the Convention? F. Dundas Todd made a speech there. He has had his photograph taken by a full dozen of well-known leaders in photography; and he hung these pictures at the convention and spoke on them. He *criticised* them, saying things in the presence of the meeting when the criticised photographers were present. If they had all been men of no standing I venture to think that some of them would have said hard things to Mr.

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Todd, and might even have stopped their subscriptions to his paper.

There are several things necessary if a photographer would rise. He must always keep a wide-awake and alert brain around his work, and he must feed and educate his brain with the books and the opinions of others. In some respects the spoken opinion is preferable to books—both are necessary. In the book it is so easy to read the faults of others, and this is comfortable but not helpful; in an honest criticism we read our own faults or mistakes. A book ought rather to start a thought than to dogmatize a fact; and it is so easy to evade the thought and pass on to the next page. In a conversation the effort to think is forced and is followed up.

The good fellowship which has been so much fostered by the conventions has already led to more than one organized club where photographers meet and swap opinions; and it has created quite a habit in a few cities of intervisiting among the galleries. It is a good movement, and should be helped along. The exchange of criticism is mutually helpful, and none can judge the points which make or mar a photograph as well as can a fellow-worker. Let us then have done with the old effete notion which angled for flattery and preferred a blind self-deception to the healthy pleasure of knowing one's work and knowing that it is good.

ITEMS OF PROGRESS.

X-Ray Slot Machines. The X-ray and the slot machine are modern utilities that have finally combined their energies to make a sidewalk show for the curious possessor of the nickel indispensable to operation. The apparatus includes a vertically mounted fluoroscope, which may be used when the tube is made active by dropping a nickel in the slot. The passer-by who desires to see the bones of his hand or wrist makes his contribution and places his hand in the proper position; the machine does the rest. With the exception of the fluoroscope, the necessary parts are enclosed, with suitable openings. The machine seems to be self-contained and is of convenient height for use by a man of average stature. One of these curious machines has been placed in a Chicago restaurant, and it excites much attention from its novelty. The apparatus is built to afford pastime principally, but it is also calculated to give the man in the street a glimpse of natural phenomena that he might not otherwise obtain.—*Western Electrician.*

THE following explanation of the persistence of vision is taken from a paper on "Animated Photography," recently read before the Edinburgh Photographic Society by Mr. James Buncle: "It may be well to say a word or two on this peculiar phenomenon which we call persistence of vision. This peculiarity of our vision was well known to the ancients, and is mentioned by one of our early writers as far back as 61 B. C. Everyone knows the experiment of revolving a stick with a red charred end in the air when in a darkened room, how it appears to the eye as a complete circle of red light, and yet we know the red point can only be in one place at a time. A similar result may be obtained when a spinning top with a colored spot on one side is spun around, the spot will appear as a complete circle on the spinning top.

"This points to a well-known fact that when an image is formed on the retina of the eye it is not immediately erased when the cause of the image is removed. The persistence or the length of time ranges somewhere from one-eighth to one-twentieth of a second. It is, therefore, necessary that this short period of time should elapse before an image formed on our vision is blotted out, so to speak. It is owing to this physiological phenomenon that we are able to produce by means of the cinematograph and such-like instruments the so-called living pictures, which are in reality optical illusions. It is, therefore, necessary when showing an animated picture that an intermittent motion be given to the series—that is to say, a single picture is shown for a fraction of a second, then as quickly as possible the following picture of the series is jerked into its place

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During this rapid change an opaque shutter intervenes to cut off the light. This rapid change must not occupy more than one-eighth to one-fifteenth the space of time that the picture is shown to the eye, so that you have picture following picture in rapid succession, and owing to the persistence of our vision, or retaining power of the eye, the pictures are so blended into one another that they appear as one animated picture, showing the separate pictures without break."

NEWS FROM THE CRAFT.

Silver Waste. I can take the waste from an ordinary gallery doing an average business and keep myself in good clothes and have some spending money besides. In this age of aristo paper and combined toning and fixing baths, nothing is more simple than saving the silver waste. Procure a ten-gallon keg, remove the head from one end, and about six inches above the other place a common wooden faucet. This is all the apparatus required. Into this keg put all the old toning and fixing baths, or the combined toning and fixing bath; also, the worn-out negative fixing baths. All are rich in silver. When the keg is full add from one-half to one ounce of sulphuret of potassium dissolved in water. Stir well and let settle a day or so, till it becomes clear. Draw off the water down to the faucet. Repeat the process again and again, till the precipitate (mud) fills the keg up to the faucet, then remove the mud to a canvas, let drain well and send it to a refining-house, and you will be surprised at the amount of silver you will receive.

Improving Negatives. In a paper read before one of the metropolitan societies, the author of it said that he considered every negative, however good it might be, was capable of improvement. In this opinion he is quite correct. We well remember some years ago being present at a demonstration of the carbon process by Mr. Lambert when some very excellent portrait negatives were handed to him, with silver prints therefrom. The first thing he did was to improve the negatives. This he did by backing them with thin translucent paper—*papier minéral*—and then working on that with a stump lightly charged with plumbago. Although the work only required a minute or two for each negative, the effect was truly wonderful, although, as we have just said, the negatives, at first, were considered excellent. It is a little surprising that amateurs of the present day do so little in dodging their negatives, particularly as it requires no particular skill, and, moreover, is quickly done. For small negatives matt varnish is preferable to paper, and it has the advantage of not discoloring with age, and is not so liable to injury. The varnish should, of course, be applied to the back of the negative. Those who have never tried will be surprised with what can be effected, and the ease with which it is done. If a shadow requires strengthening, the varnish is roughly scraped away. If lights require vigor, a few touches with a pencil, or a stump and black lead, is all that is necessary. If the contrasts in the negative are too great, they may be ameliorated by removing the varnish from the lights and leaving it on the shadows, or, if necessary, stumping the deepest ones over with the plumbago.

Thirty Years Ago. Photography is making vast strides, and never more so than now. We have heard of commercial depression in the art, but that simply means that inferior operators are going to the wall and giving it up; but high-class photography was never paying better than now. Photography will advance; it will be developed enormously; it will supersede every branch of engraving; it will be introduced immensely in decorative work; it will be recognized as a fine art, and pure photography will one day yield such transcripts from nature as artists have never yet seen.—*The Illustrated Photographer*, 1870.

Focal Value of Stops When Enlarging. Under ordinary circumstances the *f* value of stops is based upon the assumption that

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the lens is working at or about its focal value, equivalent focus or conjugate focus for parallel rays. But when the object approaches toward the lens the image recedes from the lens, so that when "copying same size" (*i. e.*, image and object equal in size), the lens works at double its focus for distant objects. Hence the *f* value of the stops is doubled. Thus, the stop *marked f*/8 would *really* be *f*/16 under these circumstances. Consequently, the equivalent "time-value" (*i. e.*, for equivalent exposures) would be quadrupled. When enlarging two diameters the working focus of the lens is 3*f*, so that the *f* value of the stops is one-third their marked value. Thus, the one marked *f*/8 should be considered as *f*/24, and so on.

Multiphotography. A very pretty system of photography, enabling us to see ourselves as others see us, and affording opportunity for much range in the art of posing, is the multiphotograph. If an image is placed in front of two mirrors inclined to each other at an angle of 90°, three images will be produced in the mirror; at 60°, five images will be produced; and at 45°, seven images; and if the mirrors are parallel, theoretically an infinite number of images will result. Advantage is taken of this to produce at one exposure a number of different views of the same subject. The person to be photographed sits with the back to the camera, while in front of the face are two mirrors, set at the desired angle to each other, their inner edges touching. If the mirrors are inclined at an angle of 72°, four images are produced.

The exposure is made, and on the developed negative appear not only the back view of the subject, but also the four reflected images in profile and different three-quarter positions. The courses taken by the rays of light are determined by the law that the angle of incidence is equal to the angle of reflection.

Enlarging — Comparative Exposures. Having made a satisfactory enlargement of a certain size we at times wish to repeat the operation under a similar set of conditions with the one difference of an alteration of size. For example, suppose we are enlarging a portion of a quarter-plate to yield a picture measuring 12 x 8, and find by trial that it requires fifty seconds. We now wish, with same lens stop, etc., to make a second print measuring 15 x 10. The simplest way is to compare the areas of the two prints. Thus the first, measuring 12 x 8, contains 96 square inches. The second, viz., 15 x 10, contains 150 square inches. These two sizes, viz., 96 (say 100) and 150, are approximately as 1 to 1½. Consequently, the light which in fifty seconds did its work over 96 square inches has now to be spread over a space one and a half times as large. We must therefore increase it 1½ times, *i. e.*, expose seventy-five seconds.

EDITOR'S TABLE.

MR. GOTTHELF PACH, of the firm of PACH BROS., of this city, was one of the many who escaped "by an inch" in the recent dynamite explosion that caused such havoc at Park Ave. and 41st St. Mr. PACH had just finished his lunch and walked over to the cigar counter, purchased a cigar, and before it was fairly lighted the explosion occurred, and the clerk who had sold him the cigar lay, instantly killed, behind the counter, though Mr. PACH did not know this at the time. All he was able to recall is that he was shot to the ceiling and then back to the floor of the café, where, after a short time, he seemed to come out of a daze and hurried to the street. Like the other victims, he was covered with dirt, mud, and plaster, and it was not till he reached 42d St. and met Supt. P. S. BLODGETT, of the New York Central, who remarked, "PACH, you need a doctor, and need one quick." Mr. PACH pressed his hand to the side of his head and found a jagged wound so plastered with mud that the blood was kept from flowing. He hurried to a doctor on Park Avenue and had his wound dressed, and then a carriage took him home, where he has remained ever since. In a short time he expects to resume his rudely interrupted labors. We congratulate our friend and coworker on his providential escape, and trust that he is by this time enjoying his usual health and spirits.

THE new advertisement of the AMERICAN ARISTOTYPE CO. on fourth page of cover shows the addition of a new eagle to the collection owned by this enterprising firm. The design is emblematical also of the growth of the company's popularity, which is well established on the merits of the various Aristo prod-

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ucts. We have pleasure in the wonderful showing made by this American industry, and wish the American Aristotype bird a long life and a prosperous one.

THE new number of the *Photo-Miniature*, published by TENNANT & WARD, whose offices adjoin ours, is devoted to *Development with Pyro, Metol, and Ortol.* It is the best and most practical treatise on pyro development within our knowledge, and every professional worker should have it. 25 cents.

THE Nebraska Photographers' Association will hold its next convention at the City Hall, Omaha, Neb., May 13th, 14th, 15th, and 16th. A good programme is being prepared, and the officers report prospects of a large attendance.

"PETER DILLER, of Bluffton, Ohio, sole owner and manufacturer of Klay's Multiplying Holder, has sold out to the CALIFORNIA PHOTO-STAMP CO., of Waco, Texas." This item of news comes to us from the CALIFORNIA PHOTO STAMP CO., Waco, Texas, in an envelope imprinted W. R. MITCHELL, Richmond, Va., apparently mailed in New Orleans, La.

THE GRAY-LLOYD MANUFACTURING CO., of Ridgewood, N. J., send us an interesting circular describing their Double Stigmats working at *f*/5.6 and *f*/6.5, and especially useful for hand-camera and instantaneous work. Lens-buyers should see this circular, which gives special prices to purchasers buying direct from the manufacturer.

THE Photographic Society of German Amateurs announces an exhibition of prints, April 24th to 27th, to be held at 62 East 4th St., New York. Particulars may be had from C. NARMANN, Secretary, 338 Hudson St., New York.

OBITUARY.—JOHN MORAN, a member of the famous family of artists, and one of the cleverest outdoor photographers of this country, who did much important work for the United States Government in the earlier days of the science, died February 19th, after a long illness, at the home of his son, THOMAS SIDNEY MORAN, New York, from Bright's disease. He was born in Bolton, Lancashire, England, seventy-three years ago, and came to this country when twelve years old. His brothers were EDWARD MORAN, who died recently, and THOMAS and PETER MORAN, who survive him.

Mr. MORAN was placed in charge of the photographic work of the United States Coast Survey and made the first pictures of the original route of the Panama Canal. He was the chief photographer of the expedition sent out in 1871 to observe the transit of Venus. With the advent of the dry-plate he abandoned active work in photography, and had since devoted himself to landscape painting, though for the last five years he had busied his leisure time in photographic work for various illustrated magazines. He leaves two sons, to whom we extend our sympathy in their great loss.

Mr. MORAN was for years an active contributor to this MAGAZINE, and exceedingly helpful to us in the first years of our journalistic work in Philadelphia, where he then resided.

THE sixth annual convention of the combined Photographers' Association of Pennsylvania, West Virginia, Maryland, and Delaware is to be held at Industrial Hall, Philadelphia, July 15, 16, and 17, 1902. The Entertainment Committee appointed includes Roger L. Kirk (Chairman), W. W. Kerst (Vice-Chairman), Joseph H. Weaver (Secretary), J. P. Cheyney, W. O. Wood, W. A. Nye, W. F. Slater, John Carbutt, E. K. Cooper, C. O. Towles, F. T. Bacon, Charles S. Bayers, A. E. Lipp, W. B. Kenderdine, H. R. Pott, James L. Dillon, A. M. Parker, B. W. Fowler, H. B. Geissinger, H. A. Hoffman, Charles M. Sullivan, Alfred Holden, W. P. Buchanan, M. A. T. Gillbee, S. Carrick, Alfred Parker, John Bartlett, Robert Morrison, H. P. Snyder, E. Goldensky, William Berger, E. J. Davis, B. MacCallum, A. J. Foltz, William Phillippi, F. L. Wallace, W. C. Schafer, Charles Slifer, Louis Blaul, Charles G. Walker, James H. Hood, James Haworth, H. A. Stone, R. G. Lofft, John Bradley, Alfred Maris, John G. Hood, R. L. McConaghy, C. H. Overton, Allen Krips, A. P. Young, H. U. Strong, W. I. Mullen, Fay Kenderdine, W. Jamison, F. J. Curry, J. W. Craft, R. L. C. Rambo, Frank V. Chambers, J. B. Pelgrift. With this committee the success of the convention is assured.

THE BAUSCH & LOMB OPTICAL CO., of Rochester, asks us to find place for the following letter, which explains itself:

"Our recent request for prints from extra fine negatives made with Bausch & Lomb Lenses has brought us a large number of the greatest variety, and we wish to express our indebtedness to our friends who have so kindly responded. We can still use some extra fine portraits, groups, and long-distance photographs made with single systems of the Bausch & Lomb Zeiss Convertible Anastigmat and with Plastigmat Lens, as well as some extra rapid instantaneous pictures of animals and men in motion. We should also like to hear from more users of our wide-angle lenses, our portrait lenses for professional work, and from those making 6½ x 8½, or larger pictures, with the Bausch & Lomb Zeiss or Plastigmat Lenses; more of our friends using the bichromate ray-filter and hand-camera telephoto might also be heard from. It is our intention to issue a profusely illustrated catalogue, and want to have representative work from all classes of lenses."

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A VETERAN MINISTER

By Wm. Notman & Son, Montreal

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WILSON'S PHOTOGRAPHIC MAGAZINE.

EDITED BY EDWARD L. WILSON.

VOL. XXXIX. APRIL, 1902. No. 544.

PHOTOGRAPHS ADMITTED TO THE PARIS SALON.

An Epoch-making Decision. The Honor Secured by an American Photographer.

As we close this issue for press the following dispatch is published in the *New York Herald*, March 30th:

"PARIS, March 29.—For the first time in the history of Paris art exhibitions photographs have been received as exhibits at the annual Salon.

"The photographs were submitted by Mr. Eduard J. Steichen, a young New Yorker, and are regarded as a great triumph. The decision to admit photographs almost caused a split in the jury. The pictures were, therefore, entered under the title of engravings, although really they are nothing but remarkable photographs."

Presuming the facts to be as stated, the announcement records the highest honor given to photography since Arago announced the invention of the daguerreotype in Paris in 1839. We felicitate the artists forming the Salon jury and Mr. Eduard J. Steichen upon their achievement. Surely March 29th should be marked as a red-letter day in the annals of American photography.

The dispatch is in error, we believe, in stating Mr. Steichen to be a New Yorker. According to more reliable information, he is from Milwaukee, and is at present studying art in Paris. Mr. Steichen's work is, for the most part, impressionistic and decidedly of the "new pictorial school" character. An estimate of Mr. Steichen and his work can be most readily seen in the volume *Photography as a Fine Art*, by G. H. Caffin, recently published.

PHOTOGRAPHY AT THE ST. LOUIS WORLD'S FAIR, 1903.

AFTER reading the announcement that photographs have been accepted for exhibition at this year's Paris Salon, our readers will doubtless be surprised to learn that the position of photography at the St. Louis World's Fair of 1903 has not yet been satisfactorily determined.

When the St. Louis Fair was first announced, Mr. J. C. Strauss wrote to Governor Francis suggesting that the Exposition authorities should provide "a pavilion exclusively devoted to the exhibition of pictures by photography, the display to be arranged on Salon lines, only such pictures being accepted as were considered worthy by a jury of artists—not photographers." The intention was plain. Mr. Strauss desired that photography should be recognized as an art and given opportunity to show its achievements as the youngest of the arts.

The suggestion was most favorably received by Governor Francis, who wrote in reply: "It seems to me that the proposal to set apart a pavilion for photography will be justified by the great advancement of

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the art and by the wide-spread interest which attaches." In this Governor Francis showed his clear view of the reasonableness and importance of the proposition. By correspondence and through the photographic journals Mr. Strauss laid his proposal before the photographic world, and his plan was enthusiastically indorsed by the National Association and similar bodies at home and abroad. When practically considered by the Exposition management, however, the proposal was put aside, chiefly on the ground of expense in erecting a separate pavilion. Soon afterward the official classification lists were issued and it was seen that photography and its applications was given place in the section devoted to Liberal Arts.

This classification, which utterly ignored the desire of photographers for a place in the Fine Arts Building, naturally aroused strenuous and continual protest. In this Mr. Strauss, as the originator of the movement, has taken a leading part, his labors placing pictorial photographers everywhere under lasting obligation. Apart from his many communications with photographic societies and prominent photographers, Mr. Strauss has corresponded directly with Colonel John A. Ockerson, Chief of the Department of Liberal Arts at the Exposition. We have recently looked over a copy of this correspondence and cannot forbear expressing our admiration of the disinterested enthusiasm which has marked Mr. Strauss' presentation of the claims of photography upon the Exposition.

In replying to the letters and documentary evidence sent by Mr. Strauss, Colonel Ockerson has not so far given much satisfaction as to the point at issue. As far as his letters indicate his position, he seems (1) to have received definite information from the management of the Exposition that photography cannot be tolerated in the section devoted to the Fine Arts, and (2) to have a strong desire to retain for his own department of Liberal Arts (comprising exhibits of typewriters, draughtsmen's supplies, musical instruments, etc.) all the pictorial attractions belonging to a representative display of photography and its applications. We hope we are not unjust in this opinion, the best we can form from his correspondence with Mr. Strauss.

A few days ago Mr. Strauss called a conference at his studio, at which were present: Colonel J. A. Ockerson, representing the Exposition; S. L. Stein, of Milwaukee; I. Benjamin, of Cincinnati; Mr. Clark, of Detroit; Henry H. Pierce, of Providence; Gustav Cramer, Mr. Strauss, Mr. Godlove, and others, of St. Louis. During the conference Colonel Ockerson was plainly informed that the principal photographic workers here and abroad would take no interest in the Exposition unless their claims were recognized, viz.: that the photographic exhibit should be divided to comprise (1) a Salon in the Fine Arts Building, and (2) an exhibition of photographs, materials, and apparatus in buildings devoted to Liberal Arts. The outcome of the conference yet remains to be seen.

Considering the honorable recognition given to photography by the Glasgow Exposition last year, and by such conservative art institutions as the Pennsylvania Academy of the Fine Arts, the Boston Museum of Fine Arts, the National Arts Club, New York, and now by the Paris Salon, the reluctance of the St. Louis Exposition authorities to do simple justice to photography is difficult to understand. The character of the photographic Salons recently held at Philadelphia, San Francisco, Paris, Vienna, and Chicago, afford further proof of the reasonableness of the claims made for admission to the Fine Arts Building at St. Louis.

The time is ripe for an international demonstration of the artistic possibilities and achievements of photography as a means of expression. If a place is provided in the Fine Arts Building, St. Louis can obtain the honor of such an exhibition. We trust that the Exposition authorities will promptly reconsider their mistaken classification, and give our art the recognition it has sought so long and has so abundantly deserved.

THE photographer who would be successful with children must be able to appreciate and cultivate that charm of unconsciousness—or rather naturalness—which is a feature of child life. And he must illustrate but one phase of this naturalness, for it is impossible to record on one plate the infinite variety of the childish expression.

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THE SINGLE SLANT.

SEVERAL letters have been forwarded to me asking for particulars of single slant lights. I think they have been already sufficiently described, and that if inquirers could only turn up published matter, read it carefully and weigh it carefully, especially where there is conflict of opinion, they would then require little beyond the necessary courage to enable them to go ahead. Such at least is the opinion formed after chats with several men who are successfully, and in some cases enthusiastically, working under single slant conditions.

Perhaps the best description of a single slant is that by James Inglis. I believe it appears in his *Artistic Lighting*, but as it is several years since I read the book, and have not a copy here at the moment, I cannot be certain. Fifty cents invested in that book will, however, be well spent money, even if the single slant is not described in it.

The advantage claimed by single slant workers is greater ease and certainty in work and results. This sounds alluring rather than convincing to the man who has not tried it. What appeals more strongly to the orthodox side- and top-light man is the fact that with a single slant a much wider choice of location is available. Where there are not elevators in a building the use of a single slant may allow the studio to be moved to a lower floor, and so save much climbing to customers. This move down does away with the grimy or leaky roof trouble, and insures a more equable temperature in the room. The real trouble about the working of a single slant light lies in the fact that it entails a new system of lighting. Those who wish to get effects with it such as they get with side and top lights sometimes seem to blunder into strange difficulties.

The tendency of single slant workers is setting more in the direction of light from one source, and that source often limited in area; and with it comes a desire to get rid of reflected or of diffused light. I have the dimensions of a light which has proved very successful to work with, a light which was, I believe, suggested or approved by Mr. Inglis. It is ten feet broad, and, commencing three feet from the floor, has a height of eleven feet of glass. The glass is ground. This was done on account of the possibility of the studio being overlooked from across the road, but ground glass would be the best in any case. This light has one defect. There is a cornice on the building which sufficiently overhangs the light to materially interfere with the top three feet of it. The blinds are three pairs—three pulling upward and three downward—and they overlap so that every ray of light may be excluded. They are mounted on spring rollers, and a single cord to each one is the moving power. There are no diffusing curtains and no semi-opaque ones. The whole working is reduced to an acme of simplicity that is delightful if only it be effective. I have heard the fear expressed that the single slant favored concentrated lighting with its small, fierce high lights and heavy shadows. This is a mistake; it does certainly allow of this class of work, and has been used for it, especially by amateur workers. But its possibilities are not limited. With a wider area of light softer effects may be obtained to any extent. It is ideal for Rembrandt work. For this popular fashion a background should be placed directly against the light. The camera points at this and the direct light is cut off from the lens with a long hood or funnel. The ground must be quite opaque to light. The sitter is placed in front of it, and by alterations of the blinds without any use of any reflectors anything from the clearest of profile or halo to the softest of Rembrandt may be obtained.

Single slant work may easily be tried in any ordinary studio by blocking up all the light except the shape and size of a single slant. If the studio is low to the eaves, and in view of the fact that the side light is severely upright rather than slanting, a narrow strip of roof should be included in this, say, from a two to three feet strip along the eaves. Let the windows which are blocked be really so—not letting a little light struggle through—and let the blinds be opaque. Then try to use the light with or without reflectors. According to one

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friend who has tried this, the blocked-up windows will never be uncovered. At least the photographer will have had the experience of a single slant without the risk (and encouragement) of burning his bridges behind him.—W. E. W.

VERRILL'S PROCESS FOR PRODUCING PHOTOGRAPHS IN COLORS.

[The subjoined account of the reported discovery of a method of producing photographs in colors, by A. Hyatt Verrill, is taken from the Chicago *Chronicle* of March 14th, and will doubtless interest those of our readers who have not yet seen a detailed report of the discovery. As we go to press other discoveries of a similar sort are advised from Lexington, Va., and Cincinnati, Ohio. Evidently we are in for another revival of the color scheme in photography. We hope the discoverers of to-day will have better luck than "the fathers who sleep."—Ed. W. P. M.]

In his studio on the third floor of a bank building in this city A. Hyatt Verrill, son of Professor Addison E. Verrill, of Yale University, is busily engaged in developing a process in photography which if it reaches a practical stage will, in his judgment and the judgment of a number of prominent Yale men, revolutionize photographic art and invade the field of the portrait painters and the water-color artists. Young Verrill claims a new discovery in color photography that surpasses as far as his tests have demonstrated all previous results in this direction. Verrill is about thirty-two years of age and is not a professor, as some persons have designated him. He has written much for the magazines, but his great hobby is photography. Yale professors who have any special work in photography always consult him, and these professors are deeply interested in the experiments in color photography on which he is working. Five years ago this enthusiastic photographer began experimenting with the different methods which several German professors claimed they had discovered for photographing nature in its varied colorings.

In none of these experiments could he obtain satisfactory results, and, according to the statement of Mr. Verrill, made to-day, the German professors have been obliged to acknowledge failure in their work along this line of natural reproduction in color. Mr. Verrill went on experimenting along original lines, with the result that he turned out the past week half a dozen colored photographs taken directly from nature, and these were presented to the Connecticut Academy of Science by his father, Professor Verrill, who has taken a deep interest in his son's investigations. Some of these pictures were copies of water-color paintings of Bermuda fishes in groups, such as the angel fishes, parrot fishes and doucella. Another was a Bermuda landscape, in which the true blue and green tints of the water were well brought out, as well as the soft creamy color of an ancient stone residence at Wallingham and the natural gray of the rocks.

Mr. Verrill in discussing his discovery said: "Whatever has been done in colored photography has been along mechanical lines up to the present time. The only thing we have to-day in the color line is the three-color half-tone which we see in many of the magazine illustrations and the transparencies used frequently by public lecturers. Neither of these is, strictly speaking, colored photography. For instance, in the three-color half-tone the negative is made by exposure through three different screens of the colors of purple, green and red. The prints are then made with three colored inks, and by the blocking out of one color by another the desired effect is secured. This is the process used in lithographing, and is a purely mechanical one. The colors secured in this way are always very brilliant and the contrasts more or less striking. It is almost impossible to get anything at all resembling natural tints in this way, even after a neutral tint is applied to the whole picture.

"The McDonough method, the only other attempt at reproducing the colors of

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nature, is simply used for lantern slides and transparencies and has not been successful as far as photographs are concerned. In exposing a plate for a negative of this kind one screen ruled in three colors is used. A positive is then made from this negative, and when this is thrown onto a screen of white, as in the case of a stereopticon lecture, and passed through a screen ruled in the same three colors as that used in taking the picture the natural colors are brought out on the white surface, only, as in the case of the lithograph process, very much accentuated. The intense blue of the sky and the equal strength of the other colors in the landscape are always noticeable to an audience which has viewed these colored pictures.

"My method is to photograph direct from nature, develop my plate and print my negative on photographic paper which, after being developed and fixed, gives the exact reproduction of the scene in all its minute colorings. By my method I can get the iridescent shades of the sea shell, the blue of the sky and changing lights of the sunset as accurately, or much more so, than can be secured by a water-color artist. The more brilliant colors are the hardest to accurately reproduce by my method, the delicate shades and the gradations of color being perfectly and clearly reached in my finished pictures.

"At present my method is not available for use in photographing animals or in making portraits of life, as the exposure is too long. In this, however, I have made much progress, for when I first began to experiment it required an exposure of two or three hours to get the required result. Now an exposure in the bright sunlight of thirty minutes is all that is required. As you can see only on a very calm day is it possible to secure a landscape under the conditions, but I am still working to perfect my plan, so that in time I hope it will be practical for life subjects. To do this I must either use a lens of greater rapidity or more highly sensitized plates. The lens which I use is one which I had made to order and is a very rapid one, costing me about $150, but I find that the best results are to be obtained by working with the plates rather than the lens. The plates I now use are about five times as sensitive as the ordinary plates used in photography. Some idea of this sensitiveness may be secured when I tell you an incident that occurred in taking a picture in a cave in Bermuda. In focusing for my picture there I had the owner of the cave hold a candle in front of the camera. Just before lighting my fuse as I was about to take off the cap I told the man to step back. He did not do so quickly enough, and I got a photograph of himself and the candle, the only light being from the candle itself.

"Of course I use a screen, but although this process is not a secret one I do not feel called upon at present to describe it or the development of my plate. The secret, however, of the entire process is in the emulsion on the photographic paper I use. This is my own invention, and for the present, at least, must remain a secret. It is here that I have met with some of the greatest difficulties in my work. The paper required for the emulsion should be a tough stock paper such as is used by manufacturers of the leading photographic papers. This kind of paper is necessary inasmuch as the process of developing and fixing is a long one and the paper is being wet and dried by turns for over one hour. The paper is printed when damp and the amount of changes it has to undergo is disastrous to any but the toughest kind of paper. The stock paper that I refer to is made only in Germany, and all that is sent to this country is bought and controlled by the photographic trust, so that it is impossible to obtain the stock paper until it has been treated with the emulsion of the concern which prepares the paper for the market. I have been obliged to buy this prepared paper, remove the emulsion and then apply my own emulsion in order to get anything approaching satisfactory results. This is both expensive and not always as conducive to the best work as I should wish, for the paper frequently becomes roughened by so much manipulation. It is almost impossible to secure paper that has not been treated with acids, and if these are present it spoils the work of my preparation. The emulsion that I use has to be mixed up fresh, for it has no keeping properties, so that the work on finishing pictures of this kind has to be rapidly pushed forward when begun.

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"After a negative is ready for printing about two hours' work is required before a finished picture is ready. The printing is done by dull light, and it requires a great deal of experience to tell how long a time is required for the best results. Ordinary printing frames are used and when developed the prints have to be dried very quickly by artificial heat. Any little variation in the smallest detail makes a great difference with the perfection of the finished picture.

"The cost of this work is not as much as many people will at first imagine considering the amount of time required in making the prints. The finished pictures will cost about four or five times as much as ordinary prints, but of course are not to be compared from an artistic point of view.

"At present the method is only serviceable, as I said in the first part of the interview, where a long exposure can be given. It will, however, be invaluable to those who have collections of birds, minerals or other inanimate things that they wish photographed in original colors. For instance, I can photograph a painting and bring out the natural beauties of the original so that it will be impossible to detect the slightest variation. In this it will surpass water-color drawings, for there it is impossible to secure a perfect reproduction of the original. One of my first undertakings in this line will be the photographing of the famous Hyatt collection of Sandwich Island sea shells. The collection was given to Harvard by the late Alpheus Hyatt, assistant professor of archæology of Harvard University. For many years before his death Professor Hyatt was exceedingly anxious to have a colored reproduction of the shells for illustrating purposes. The collection was such a valuable one, costing many thousands of dollars, that Professor Hyatt did not wish to trust it in the hands of the lithographers, and it was only possible to secure any colored pictures of the shells by transporting the collection to the studio of some such expert. The attachments used in this work and the cameras are very cumbersome, so that it was not expedient to undertake photographing the shells at the museum where they were on exhibition.

"The only other method would have been to have a water-color artist reproduce the colorings and then make a three-color half-tone from that. This would have been very expensive and not entirely satisfactory, for the shells are beautifully shaded from the most delicate pink to the brightest blue, many of the colors shading into each other in such a way as to give an iridescent effect.

"To obtain that effect by any colored photographic method known, or even by water-color, would be out of the question. I can now photograph this collection, and in the finished picture get all the colors as in the original shells. The method will also be largely used by persons owning valuable oil paintings, for the finished photograph will be as beautiful in color as the original picture."

Mr. Verrill stated that he did not intend to patent his discovery. "In the first place," said he, "the real secret of the process is in the formula of the emulsion, and if I patent that I must make it known at the Patent Office, where it can be seen by every amateur in the country. The patent would only protect me from professionals selling the emulsion or pictures made by this process. It would not prevent amateurs making pictures for their own use, however. Again, the entire process could not be patented, for I have combined many different processes, all of which are not original, so that would prevent my patenting the entire method. For the present both the method of taking the pictures and the formula of the emulsion I shall keep secret, although I have no fear even if I made the formula public and keep the latter a secret that anyone could get any successful results. It has taken me five years to reach this stage of partial perfection, and I am confident that it would take years for anyone to arrive at anything like success with only a part knowledge of the process. Later, however, I may make the entire process public. At present there are some imperfections, aside from the long exposure required, in the process. For instance, I have not succeeded as yet in getting a satisfactory vermilion tint. As I said, the bright reds are the hardest colors to get, but I am confident that it only means a little more experimenting

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before I can remedy that deficiency. It must be remembered that it is only a week since I finished my first pictures and that I have not had time since then to work out some of the weak points in the process."

TO CONSTRUCT A DARK-ROOM.

BY THOMAS WOOD.

Is wealth more important than health? It would seem so, for we see little in our magazines about the construction of dark-rooms and much about the building of studios; and yet we are often told that the former are unsanitary, ill-ventilated, and badly planned. If this is really so, it must be that the first photographer looked for a "dark hole," ready made, instead of making it, and so found his way to some small closet or to the coal shed. I have twice fitted up a developing-room, and will just describe the one I have at present, in the hope that it may prove useful to some worker who has not got one which is satisfactory.

The room which I use is ten feet long by six broad, with the door entering at one end and a large window in the opposite end. Until twelve months ago I used this window to supply light. The top half was kept permanently blocked with a frame of wood covered with sheets of brown paper. The lower half was fitted with a frame containing a single thickness of yellow cloth; this was closely fitted so that not a single gleam of white light could work through or around the frame. I had three other frames, one yellow and two deep red, and by standing one or more of these in front of my fixed yellow screen I made the room safe for development. With the yellow screen only I could mix solutions, etc., as comfortably as by daylight, and, of course, I used it whenever developing Dekko paper. Twelve months ago I changed to electric light, using lamps of ruby glass, which I got from Gatchel. One of these is hanging over my developing sink, rigged with a weight and pulley, so that I can raise or lower it at will. Another hangs in the centre of the room, just out of reach of my head, but I scarcely ever use it. Two white lights hang, one near the sink and the other near the door. To prevent mistake the lights are operated from a separate switchboard, and there are also turn-taps close to the lamps. If I could not have electric light I should certainly try for daylight rather than an oil lamp or gas. I have used both these, and had headaches.

Lamps could be used with good ventilation; mine wasn't good, I fear. The ventilation I have now cost me $40. As far as I can see, I could have done the work myself if I had had the know how; but it works all right now, and I am satisfied. There are two ventilators let into the window, near the top—the glass has been cut—and the lower part of the door is riddled with slots, with a hood over them inside, so that their light does not trouble me. I always supposed that ventilation went up hill, but the air comes in through the window and out through the door. The man told me it would do so in this building, and he has proved right.

But all this description of light and ventilation is keeping me from the fittings which more belong to dark-room work. Seven feet of one side of the room are taken up with the sink and the tables at each side of it. In the corner opposite the door is a table, its top three feet from the ground, twenty-four inches long by twenty inches broad. This table is quite level, for on it I stand my fixing baths. Underneath it there is a space for the hypo tank and three shelves, giving just enough room to allow porcelain fixing, etc., trays to be stored away. Next to this table comes the sink, its upper edge flush with the table. This sink in inside measurement is thirty-six inches by eighteen inches broad and four inches deep. It is made of inch wood, lined with lead. This lead has been well beaten down into the corners, and it is turned over the upper edges of the sink, being fastened on the outside

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with copper nails. I don't think that any sink can be as good as lead. It can easily be kept clean, and if a bottle or a negative is accidentally dropped into it there is a good chance that it will not break. The outlet to this sink goes through the wall, and has an open mouth over a grating outside. If it went to some inclosed drain it should be trapped. Over the sink I have two taps for cold water, with about four inches of rubber pipe on their ends. By squeezing this I can control the force of the water, and it prevents negatives accidentally getting scratched on the metal. I have the sink so big because I wanted to be on the safe side. The washing tank is permanently located at the end next the table already described, in front of the outlet and directly under one of the taps—the other tap is just one foot from the other end of the sink. The second table is like the first, but raised a little just to overlap the edge of the sink. It is grooved toward the sink, and very slightly tilted in the same direction. This table is used to stand bottles, measures, dishes, etc., on, and after they have been washed they are turned upside down on it to drain and dry. Developing itself is done over the sink. I have a skeleton of laths twenty-four by twenty inches. Being twenty inches broad, it rests firmly on the front and back edges of the sink, and to prevent it slipping forward the battens which hold it together are placed parallel with the length of the sink, and the two outer ones are placed to exactly fit inside the sink. By working on this, any liquid which slops over falls into the sink. Being loose, the frame can be lifted out whenever required. Over the fixing-table is a twelve-inch shelf, useful to hold extra dishes, and above the grooved table are two shelves, the lower one holding bottles which are frequently used, and the upper one holding measures, funnels, etc. Under this table there is another shelf for extra bottles, etc., and under that the box which holds waste paper, etc. A big sponge, useful for mopping, hangs over the sink in a wire basket, and scrubbing and cleaning brushes lie in the sink.

On the opposite side of the room are five shelves, five feet long and twelve inches broad. On the top shelf all stock solutions are kept, and all things in use which are only wanted occasionally. As the space in the centre of the room is only just over three feet broad—I find it quite broad enough—it is easy to reach any bottle which I require. On the second shelf I keep my stock of chemicals except hypo. The hypo keg I keep in the cellar—it is a dry cellar—and bring it into the dark-room in the shape of a saturated solution. On the next shelf I keep my stock of plates, and there are two lower shelves which hold dishes, etc.

I find a room of this size quite sufficient, though it is too small for two. I could well spare the space under the window for shelves, and shelves could be run the whole length of the wall opposite the sink. I left the place under the window for some sort of summer refrigerator, but I have found that the water-supply is cool in summer, and so I can manage by occasionally getting a pail of cracked ice in very bad weather.

In winter I have a small oil stove to boil water. With this I keep my solutions sufficiently warm, for the room is kept from extreme cold by other rooms or warm passages on every side except the window side.

I never keep lenses or any apparatus in the dark-room. I have been warned against keeping plates there, but in a dry, ventilated place like mine they take no harm.

Very likely some photographer who reads this may say: "Why, there is nothing in it; I feel so as I read the article through." But I know that my dark-room is comfortable, and that in it I never get either earache or headache. I hope it is because there are very few fitments in the room that this description seems so empty, and that other photographers who have not comfortable dark-rooms will look around to see if they, too, cannot improve things. All may not be so lucky as I am in water-supply and equableness of heat, but all can at least have ventilation and sufficient non-actinic light.

EVERY year some photographers begin their business careers over again from the bottom. A fire and no insurance is the cause. How about *your* insurance?

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THOSE CARBON DIFFICULTIES.

BY ROBERT MELVILLE.

ARE there any difficulties in working the carbon process? We have often been told, both by enthusiasts and by practical professional workers, that carbon is as simple in its manipulation as is almost any other process. I believe that I myself have said this in print at least once. But I have repeatedly met photographers who after trying the process for some time have produced results which could not be called satisfactory. This would seem to show that some practical men *do* find a certain amount of difficulty; and we find, too, that carbon workers (first-class men) are not numerous, and command good wages. When evidence conflicts the truth is often found somewhere on a middle course, and so it is in this case. Carbon is easy when the "know how" is learned. But like every other process—albumen, platinotype, bromide, aristo, etc.—it has certain knacks and peculiarities which *must* be understood before a reasonable amount of success is possible.

The men who have spoken to me as having tried carbon and failed are ambitious, go-ahead men from small townships, where there is not too much business and where they try to hold what business there is by being up-to-date and active in every way. Just now, before the wretched —for carbon workers—warm season commences, is a good time to try and learn what are the difficulties and how they can be overcome. The great difficulty appears to lie in the fact that there are so many points in carbon work where the manipulation must be just right. These are not *difficult* points, but they are particular ones; and we can take so very much latitude in plate exposure and development, and to a lesser extent in working printing papers, that we do not realize that the degree of care which suffices for them may not suffice for carbon.

Here I think is the real kernel of the difficulty. It is next to impossible to work carbon amid interruptions and among other work, especially when the worker is not very familiar with it. This is not only because the work must have full attention at certain points, as, indeed, must all work, without the worker being liable to be called away, but more because of the cleanliness which is so essential. If possible, a corner of the work-room should be kept sacred to carbon work, and at the very least a special set of dishes must be used and each kept carefully to its own purpose, for the slightest trace of a foreign chemical may prove ruinous at some stage of the process. I will presume that I am writing for those who have already some acquaintance with carbon, and so shall not necessarily enter into every detail of working.

The formulæ for sensitizing tissue—of course the photographer must do his own sensitizing—vary very considerably, anything from 1 to 7 per cent. bichromate solution being suggested. Whatever latitude is allowable the photographer must grasp the fact that until a man is experienced in his work he must adopt one known strength of solution and keep to it. Or, more correctly, he ought to have two formulæ, one for winter and the other for summer, but he should know exactly when he makes the change and not gradually drift from one to the other.

The formula which I use (and which was published by Mr. Ernest Heckroth in *Mosaics* some years ago) is bichromate of potash, 3 ounces; ammonia, 1 ounce; alcohol, 2 ounces; water, 100 ounces. This is winter strength; for summer reduce the bichromate to half the quantity without changing the other ingredients. The ammonia I use is carbonate; but liquor ammonia has been spoken of as better in very moist, warm districts. In summer about 80 grains of salicylic acid may be added to prevent reticulation. No person should attempt to learn carbon working during hot weather. By the use of ice it is not difficult to keep solutions at safe temperature, but still the beginner is very iable to come to grief, and should do his experimenting when the weather is cold. The tissue having been cut up to the size of the negative to be printed, the solution is poured into a deep zinc or porcelain tray, and the tissue is immersed, face down, in

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the bath. Brush the back lightly with a camel's-hair brush to burst air-bells, then after about a minute turn the tissue over in the bath and brush the face. Do not burst air-bells with the finger or let the fingers come in contact with the sensitive surface.

The chief difficulty in sensitizing is the temperature of the solution. This should not be above 60°, and never, if possible, allowed above 58°. If it is kept between 55° and 58° the best results will be obtained. To effect this in warm weather the dish must be placed in a packing of crushed ice, or of ice and salt. The tissue will be sufficiently sensitized in about three minutes, but the exact time can be allowed by watching the curling of the film. When first laid in the tray the tissue will curl up, film side inward. Then it will gradually straighten and begin to curl the opposite way. It is properly sensitized when it is quite flattened out, before it begins to curl the second time. It is said that carbon tissue is insensitive to light when wet, but I prefer to sensitize by lamplight. When the tissue is flat lay it film downward on a perfectly cleaned and talced sheet of glass. This sheet of glass must be cold—chilled on ice in warm weather—and the tissue squeegeed down onto it.

The proper squeegee to use is the old-fashioned flat one, not the roller variety. The glass with the tissue on it is placed in a dry, clean place, in the dark, to dry. The tissue should not dry too slowly nor too quickly. Less than five or more than eight hours drying is often sufficient to cause a failure. When it is quite dry it will easily peel from the plate, and should then be stored in the dark in an air-tight tube with a little calcium chloride to keep the air dry.

Tissue should not be used immediately it is dry. Keep it for one or two days before using. Failure is sometimes due to climatic causes. In warm, humid weather, such as is common in some States and unknown in others, the tissue tends to lose its sensitiveness (*i. e.*, its solubility) in drying. The addition of carbonate of ammonia and of alcohol counteract this tendency, as does the using of a weaker sensitizer in warm weather.

The printing of a carbon is often cited as one of the difficulties of the process, but considering the latitude which is allowable in exposure no prints should be lost from this cause after the first experimental days are passed. Almost any negative is suitable for carbon, and the sensitizer is often made stronger or weaker or the tissue used at varying lengths of time after sensitizing, according to the density or otherwise of the negative. For beginning work a crisp, plucky negative should be chosen. For a photometer take another negative of similar character and place in a printing frame with a sheet of solio behind it. Place both carbon and solio negatives to print in exactly the same light. Watch the solio print, and when it is not quite printed deep enough the carbon print will be sufficiently printed.

After the tissue is exposed lay it in a tray of cool water, brushing it lightly on each side to remove air-bells, but without fingering the film. As before, the film will first curl inward and then flatten out before curling the opposite way. As soon as it straightens out from the first curl it should be taken from the water and placed with its face in contact with a piece of single transfer paper supported on a sheet of glass. Place a rubber cloth over them, and squeegee from the centre outward to expel all air, and press the two faces in close contact and place under pressure for fifteen minutes. From here on warm water takes the place of cold. A good depth of water should be used here. Commence with it at 90°, and while the tissue is soaking gradually raise the temperature to 100°.

Do not attempt to strip the paper from the film until the coloring matter commences oozing from the edges. Then strip and be careful that the print does not at this stage reach the air. If it floats to the surface of the water blisters may result. Underexposed prints, which will come up quickly, may be controlled by cooling the water, while sluggish prints may be accelerated by more heat.

It is at this stage, when the water is warm, that there is most risk of bichromate poisoning. This can be avoided in part by refraining from the unnecessary and rather amateur habit of constantly handling the print. India-rubber gloves are a nuisance, but necessary, and one may be worn on the left hand, the right being

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kept out of the solution. It is well to be careful in these matters if anyone has a skin at all sensitive, for once bichromate poisoning is contracted it cannot be eradicated. After the print is sufficiently developed, which is when no more gelatine will dissolve away, though the surface is well swilled with warm water from a cup, it is washed for one minute in cool water and then placed in a saturated solution of chrome alum. This alum is terrible stuff if it gets in the wrong place, and its dish should be religiously kept for its own special purpose. If the alum is fresh the yellow bichromate stain will leave the print in five or six minutes, and it is then washed for five minutes in cool water and hung up to dry.

In double transfer the method is the same except that a temporary support is used instead of a single transfer paper, and that after printing the two films should remain in contact, under pressure, for an hour. When the print is developed and washed and dried, wet it again, and wet a piece of double transfer paper in *lukewarm* water until the gelatine on it just softens. Place the two in contact and squeegee fairly strongly, then hang up to dry. When dry they will pull apart. Not until the tissue is finally dried should it be touched with the fingers. Even before sensitizing it must be handled gingerly.

By keeping to known conditions—known strengths of sensitizer, known temperatures, etc.—many difficulties will be avoided. By starting development with water not exceeding 90° much latitude is possible, forcing over-exposures with more heat afterward or checking light prints by cooling the water. If anyone who has tried carbon and failed wishes to again try it he should carefully read one or more of the several text-books on the subject and note any wrinkles. A good article on the subject was published in *Mosaics*, 1901.

The first time carbon was introduced into America it proved a failure among professionals. In its present introduction it has scored a signal and permanent success. But it has not yet reached its widest popularity, and will prove a profitable line to any man who adds it to his list of processes.

MACHINE-SHOP PHOTOGRAPHY.*

THE photographic department of a modern machine manufacturing plant is considered at present almost as essential and important an adjunct to the successful operation of a concern as the draughting-room or tool-room. It should, therefore, be fully equipped with all the accessories of a first-class photographic studio, and when the business is such as will warrant the outlay a professional operator should be put in charge. The great majority of manufacturing establishments, however, do not care to increase the scope of this department beyond a simple record of standard machines built at the present time, for the purpose of furnishing photographs to intending purchasers; consequently, an amateur, who may be one of the firm, a draughtsman, or even a workman in the shop, is selected to do the photographic work which may be required from time to time.

It is the writer's purpose here to outline a system of machine-shop photography which is the result of many years of experience in a small way, and is in every way suitable for even the modest concern to adopt. As to the uses of shop photography—they comprise, to begin with, the supplying of photographs of the various products of the establishment, to serve advertising purposes. These photographs are usually made from a point of view that will most readily show the machine as a whole, substantially as it would look to an observer standing at its side or in front of it. This does not always give to an intending purchaser any idea of its construction or the arrangement of the working parts. However, it will in many cases be sufficient, though occasionally a prospective purchaser desires to be further informed regarding other points which are only obscurely shown on this general picture, and to enlighten him it may be necessary to make such other views as will explain them.

* From *Cassier's Magazine*.

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One must anticipate what is wanted, and should photograph the machine from different points of view. Photograph the working parts, often a single part, especially if this part is a feature unique in that particular design of machine—for instance, on a planing machine the view looking down into the gearing. This will show how it is arranged and driven. Then there are the feeding devices, the cutting heads as a whole and in detail, oiling devices in tracks, belt-shifting devices, and others, of all of which photographs would be desirable.

In the case of a lathe, photographs would be desirable of the cone head, taken in such a way as to explain its construction and special features; of the carriage and apron, with views showing its working parts; and of the special tool block, taper attachment, or any other device for which superiority may perhaps be claimed over a competitor's design and which it may be desired to impress upon a prospective purchaser. But there are many other things as well which may come to the mind of the intelligent and progressive shop photographer, all tending to increase the value of his department.

Anticipate what your customer may desire to be enlightened upon regarding your machine, and be prepared with a good photograph to answer his question. It does not follow that such photographs should be sent out broadcast in answer to every inquiry. In fact, it would not be good business policy to do so, as you might be giving your competitor the very assistance he was desiring to get so as to improve his design.

These detail photographs, as we call them, should be in the hands of your travelling men and your selling agents, to be used by them solely for the purpose of selling your goods. Nothing can impress or influence a possible purchaser more than a well-selected lot of fine photographs, showing a machine completely in all its working parts.

Again, photography can be of great use in making copies of standard drawings. These copies may be bound in book form, each book containing a complete set of working drawings of such machine. These drawings can be easily carried along by travelling selling agents, and, with the detail photographs of the machine itself, most intelligently explain the machine to be sold. Photographs thus made on 8 x 10 inch plates and blue printed are of ample size to clearly show all lines and dimension figures, and are much easier to carry about than the large blue prints or tracings of the original drawings.

Again, where certain changes are made in existing types to meet the requirements of special orders, such changes can be photographed and a copy filed with the complete order for future reference, should occasion require it, as in the case of repairs, for example. This applies principally where some change is made or ordered in standard patterns and is made to fill only this particular order, the pattern being afterward changed back to its original condition.

Photography can be used to advantage also in the pattern-room in making records of patterns, especially in the case of a complicated pattern that it would be difficult to understand or to explain to the foundry man. In the case where patterns are sent to a distance to be cast, photographic records would show just how the separate pieces went together, especially if each piece in the photograph had a number marked on it corresponding to the number on the pattern piece itself. All patterns could be photographed on a small, inexpensive plate, and a print from each pattern could be made a part of the pattern record. If the card index be used for a pattern record, the photograph could be pasted or printed on the back of a record card, and this would show at a glance, even to a novice, the shape and character of the pattern itself, and would aid largely in picking out this particular pattern in the storage loft when occasion required it.

In the foundry a photograph taken in the process of moulding a complicated piece might be of great value for future reference should the same piece be ordered again, and might be the means of saving considerable money in making the piece a second time, especially if a new man had the making of it.

In the machine shop photography would apply equally in showing the work in its several stages, making a picture record of

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a complicated machine from the time the first machine was done to the final or completed machine ready for shipment. Of course, it would be desirable to do this only in cases where some special methods and appliances were used which would be of value and assistance should a similar problem arise in future work. A reference to what had been done in the past on similar work might be the means of saving much time and expense.

Regarding the apparatus and methods employed in getting the best results, every photographer has his own pet notions and way of doing his work. He has a preference for a certain make of camera, plate, developer, etc. I do not care to discuss this question, nor do I wish to assert that my way is the best. I propose only to outline the method I follow as one that has given me the best results in my particular work.

In the first place, a good dark-room is indispensable. It should be of ample size, should be well ventilated and "well lighted"—the light so arranged as to be readily adjusted to be able to work the quickest on the very slowest plates, or made light enough to see what you are doing when toning or developing. There should be a sink with running water passing through a filter, and places or shelves at each side for your hypo tank and stock solutions. A rack over the sink is desirable for holding the developing tray and your washing-box near at hand. Other shelves should be suitably placed for storage of plates, and a rack for storing negatives, drawers arranged to keep supplies, paper, etc., with a broad top, to be used as a table.

If possible, arrange this room so as to enable you to do all your work in it except the printing. Don't allow a lot of unlabelled or empty bottles or boxes to accumulate. Keep everything perfectly clean about the place. Have a place for everything and keep everything there. Select one brand of plate that you have found to work well in your particular work and stick to it. The same advice can well be applied to the developer.

On machinery there is so much light and shade that great care must be taken to light it properly. If possible, place the machine where the light comes in from the north, but not where the strongest light comes from the top. The upper part of a machine is usually made up mostly of bright work, and will be over-exposed before the lower portion, which is usually dark, painted work, has had normal exposure; therefore, it may be necessary to screen or cut off top light and reflect light into the darker parts of the machine, so as to give uniform lighting.

I find it desirable, where there is much bright, polished work, to dull it by taking a ball of putty and tapping it over the bright work. This deadens the polish. This is necessary only where there is strong reflection. It is not desirable to have the picture too flat. Contrast makes an effective picture. Painting the castings a light color makes a very attractive picture, but the idea of a machine photograph is to give a picture which looks like the finished machine, and this is not the case where light paint is used. I find that by cutting off the top light and reflecting light into the dark portions of the machine I get a picture which is very satisfactory.

Reflectors can be made of frames covered with white cloth, or paper preferably, which can be placed at such angles as to throw a large amount of light onto the machine in the places where it is most needed. The foreground should be prepared by laying clean white boards on a level with the feet of the machine, extending well in front, at each end, and at the rear as far as possible, so as not to show the joining with the screen. The screen should be carried back of the machine far enough to be out of focus, and if at all soiled, it should be kept in motion. A gentle swaying sidewise will be sufficient to make a clean background. Great care should be taken to keep this screen clean and to keep it far enough away from the machine so that no shadows are cast upon it, as this will greatly facilitate blocking-out or painting out the background on the finished negative. This blocking out is necessary if a pure white background be desired.

Usually the machine has the maker's name cast on it, as well as pattern and piece numbers. These can be prominently brought out by rubbing them over with

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chalk. Ordinarily, a well-exposed and developed negative requires no retouching. If, however, it should be necessary, my advice is to take it to some professional retoucher, and, at slight expense, have it done properly. This is a trade in itself, and it is cheaper to have it done than to learn the trade.

A long focus lens I find to be the best, as it gives better definition and less distortion than a short-focus, wide-angle, especially if the machine to be photographed is long and narrow. The lens should be absolutely rectilinear, otherwise the straight lines in the machine will be curved and the whole machine distorted. Oftentimes, however, a cheap lens will give good enough definition and prove quite as satisfactory as a very expensive one. The box should be good and strong, and the tripod on which it is mounted should be heavy and rigid, so as not to vibrate or jar and so blur the picture. Stop the lens low down and expose for the shadows, and develop slowly, and, if necessary, accelerate development where it is weak. Continue development until all detail is out and there is sufficient density and contrast to give a good print.

Do not get the plate too dense, as it makes a hard "printer" and one that has too great contrast to be satisfactory. Regarding length of exposure, development, etc., one must be governed wholly by his own particular surroundings and conditions, the kind of plate used, the size of the stop, the time of the year, the hour of the day, and the value of light on the work.

THE DETERIORATION OF LENSES.

BY H. FENNER.

THERE is an old theory that, except for its unfortunate brittleness, glass is practically indestructible under ordinary conditions of handling. Place it in the fire, or in boiling water, and it may melt or crack; and it will take a scratch from a diamond or from some other hard substances. But nothing occurring in legitimate, every-day use will affect it. This may be "common-sense experience," but it is very far from the truth in the case of lenses, particularly in regard to some lenses of modern construction—and a vast majority of the lenses in use come under this head. It is not too much to say that many first-class lenses now in use have no greater value, as tools of trade, than have similar lenses costing perhaps a third the price, and sold without the assurance of any maker's name. These once first-class lenses have slowly deteriorated, so slowly, probably, that the owner has no idea of the fact, though some day he will begin to think that he sees a difference in his work, without being able to locate the cause of the trouble.

Lenses when they leave the makers have a very high polish on their surfaces. On the degree of this polish the brilliancy of this image very much depends, and this, transferred to the print, is a matter of dollars and cents to most photographers, new school and freak work notwithstanding. This brilliancy—and its lack—may be seen if a lens on which a film of dust has settled be focused on a white printed card. Let the card be strongly lighted, and examine its image on the ground glass. Then clean the lens and examine the image again. At this second attempt it will be appreciably more black and white.

The common lens deterioration is due to the simplest of causes—the gradual depolishing of the surface by dust. This arch enemy of all cleanliness invariably settles on lenses, and is often cleaned away with a duster or a corner of the focusing cloth. As there are many "grits" in dust which are harder than soft glass this cleaning becomes, in point of fact, a slight scouring, the more so because the photographer, not content with dusting, gives a polish, and so rubs the grit in. The remedies are prevention and care. When not in use lenses should be kept in a dust-proof cabinet, and when dust does settle on them it should be lightly dusted off with a camel's-hair brush. Then, to clean or polish it, use a clean piece of soft silk. A handkerchief or the

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focusing-cloth may have picked up dust on its own account, and so the silk, kept for the purpose, and frequently washed, is safer. Sometimes when a lens is not used for some time, an iridescence spreads over its surface. This comes from careless storing, often in reach of damp. If it had been kept in the dust-proof cabinet already referred to, and further protected from light and atmosphere by its hood, there would have been no trouble. Lenses which have become depolished or "rusted" can be repolished. But unless the damage is *very* superficial the work should be undertaken by a lens maker.

A lens-working value is often impaired by the wearing of the mount. In this case the defect is easily put right, and by the photographer himself. Iris diaphragms are particular sinners in this respect, the friction of their opening and closing soon wearing away much of their blackening. It is for this reason, probably as much as any, that many photographers still cling to Waterhouse stops.

It is probable that more trouble in lenses arises from these little defects than from falls or other hard knocks. As of old, it is the man who uses reasonable care that comes out ahead.

NEWS AND NOTES.

In its report for the year 1901 the Franklin Institute, of Philadelphia, states that it has in its library 1225 photographs of scientific or industrial interest.

In the Art-reference Room of the Pratt Institute, of Brooklyn, N. Y., there are 16,000 mounted photographs, illustrating architecture, sculpture, painting, and decoration.

Photographic Surveying. In view of the unerring accuracy of photographic results when obtained with due precaution, it seems remarkable, says the editor of *The British Journal of Photography*, that the subject of surveying by photography has obtained so little acceptance in practice. The process is exact, and the actual survey capable of being made with a rapidity which, under many circumstances, would be invaluable; it is probable that the main cause of this indisposition to adopt photography for the purpose may lie in the indifference of the experts in ordinary methods to learn a new process. There must, for example, be thousands of cameras in the hands of our gallant officers at the front, but we doubt if any have been employed with the object of the negatives being collated and reduced to scale and the various recorded dimensions calculated out to make exact maps. The topic was taken up at a recent meeting of the Royal Astronomical Society, Professor Turner reading a paper on a simple method of accurate surveying by means of an ordinary camera, and showing that photography was capable of producing results of great accuracy. There is in this connection one consideration that may have a bearing on our remarks, and that is that ordinary surveying is often such a mere matter of measurement and neat drawing that very little training would be needed for its carrying out, while the reducing of perspective representations to a flat scale would need special study.

Fire-proofing Textile Fabrics. To render backgrounds and tapestries in the studio fire-proof has been thought advisable by the Prefect of Police in Paris, and at his suggestion several formulæ have been worked out by the municipal laboratory. The following is one of them:

Water	2	pints.
Ammonium phosphate . .	4	ounces.
Boric acid	3½	drachms.

The tapestries are to be soaked in this and well dried. Sodium silicate in combination with aluminum sulphate (ordinary alum would answer equally well) is also recommended. It is not unlikely that half a pound of sodium sulphate (Glauber's salts), at the cost of a penny, dissolved in a couple of quarts of water, would be just as efficacious.—*Photography.*

An Edinburgh Photographer was visited the other day by a man who wanted an

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unique picture taken. "You see, it's like this," the stranger began. "I had a girl that I loved, and we was going to git married. She had her things made up, and we was all ready, when she was taken ill and died. Now, what I want is a picture of me sittin' on her grave weepin." The photographer was touched at the homely story of grief, and told him he could send a man with him to the grave and have the picture taken as desired. "It's some distance," the stranger explained; "it's over in Ireland. I expect it 'ud cost a lot to send over your traps for what I want." The photographer said it would, whereupon his visitor added: "I thought that mebbe you could rig up a grave here in your shop, and I would weep on it, and it would do just as well. It's no trouble for me to weep anywhere."—*Liverpool Post.*

For many years it has been the custom for the British sovereign to hold state receptions during the afternoons. The ceremony over, there was a great stampede to the studios of fashionable photographers, for the unalterable rule appeared to be that a photograph of the presentation dress should be made on the eventful day and immediately after the event. A reception held during March introduced the innovation of an evening hour. We learn that some of the London photographers have proved equal to the occasion, taking pictures by means of their electric light installations. Some of the studios blazed well into the small hours before the last sitter was satisfied.

Hot Water in Platinotype Printing. With the rougher varieties of platinotype papers a very striking effect can be obtained by printing the image completely out, so that the whole picture is visible and the dark parts quite rusty colored, and then developing with plain boiling water. A total suppression of detail, with an effect resembling a gum print, will result and a rich sepia tone be imparted to the photograph. Any over-printed photograph may thus be saved if not removed from the frame.

Combined Development and Fixation. Combined toning and fixing is not new, but combined development and fixing is rather less usual at present, though there is no knowing what we may come to. Simultaneous development and fixation can best be accomplished by using kachin, although this is not the only reagent. The plate must be fully exposed, and the following is one of several formulæ which have been published:

Sodium sulphite . .	1 ounce.
Caustic potash . . .	100 grains.
Kachin	100 "
Hypo . , . .	¾ ounce.
Water	10 ounces.

It is well to have an addition fixing bath at hand, in case the fixation has not kept pace with the development; they should, however, proceed simultaneously.

Brush Development. No photographer should be without a set of camel's-hair brushes for use in every branch of his work, for with them he can obtain a control over the development of plates and papers obtainable in no other way. When developing negatives either restrainer or accelerator can be applied with precision by means of a brush, and a definite local action of the solution thereby established, halation spots can be remedied, light parts darkened, and so on. In the case of bromide papers a broad brush is a very convenient agent for applying the developer to the print; rapid sweeps of the brush to and fro upon the surface of the photograph effectually prevent uneven development, and air bubbles are no longer to be apprehended. With platinotype papers delicate vignetting effects are accomplished by covering the print first with a coating of glycerine and then developing with a brush dipped in the oxalate of potash, to which an equal quantity of glycerine has been added, the action of this latter being to restrain the developing process. Any shape of vignette can be obtained in this manner, care being taken not to drop any of the oxalate upon that part of the picture which is to remain white.

Potatoes and Coloring. It is often difficult to make the color stick to a photograph, both in retouching and coloring. A simple method is to pass a piece of freshly cut potato over the surface of the image; the color sticks immediately to the parts thus treated.

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PORTRAIT

By George W. DeVore, Leamington, Canada

Illustrating the Article "A Homemade Lens."

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By FRANK G. SCHUMACHER
Los Angeles, Cal.

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By WM. NOTMAN & SON
Montreal

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GEORGE G. ROCKWOOD, Esq.

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CHRISTMAS CAMERA CATCHES FROM CALIFORNIA.

In those days of yore when Rulofson and Bradley, Taber and Foss, Partridge and Muybridge, and then Schumacher, came to our conventions in the East or placed fine examples of their work in our annual exhibitions some of our craft tried to make out that the wonderful "clearness" of the work of our California compeers was "due to the light" of the occidental clime and not to the lens or the collodion or to "the use of bromide in the bath."

Now an equally puzzling conundrum arrives among us of the East, when, during the winter, we have to work a good deal of the time "under a cloud," we receive from California pictures of tropical fruit, oriental flowers and perambulating babies, all full of sunshine, and others of people taken out-of-doors in what we regard as "summer clothing," all labelled "taken on Christmas day," etc. Will wonders never cease?

HIS FIRST CHRISTMAS.

We are prompted to these words by a letter crowded full of such pictures from one of our readers in California, from whose work we have selected to engrave the pictures which appear herewith and which speak well for themselves and for the "light" on a California Christmas day. Do our friends Cramer and Seed, Hammer, Lovell, Carbutt and others (which one?) send "different" plates out to the Pacific, or is there some mysterious developer used unknown to this side of the continent? Need we to puzzle over it? We wait for an explanation with "formulæ." The pictures herewith were made by Mrs. Fred. C. Richardson, Santa Paula, Cal., "a *constant* reader," who uses her camera largely to secure records of incidents of life and travel. These enable her to make her friendly correspondence all the more interesting, and her album is a treasure-house of personal memories which in after years will pleasantly recall past days and occupations.

The use of the camera in this way as a notebook is one of the blessings conferred upon the world by photography, and as year after year brings its crop of little cameras and conveniences simplifying the practice of photography, we see more and more how photography is bound to become of universal usefulness. May its followers ever increase. In this everyday use of a small camera there will often come pictures worthy of enlargement, or which may be sold for publication purposes at a handsome profit. We have known of several instances where a fortunate exposure has netted over $100.

MATILLIGA (JAPANESE) POPPIES.

ORANGES, "TWO FOR A PENNY."

RESTING AFTER TENNIS.

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A PORTRAIT FROM NEW ZEALAND.

COSTUME PORTRAIT.

By Standish & Preece, Christchurch, New Zealand.

We have pleasure in reproducing the portrait here shown from an interesting parcel of everyday work received from one of our New Zealand subscribers. Messrs. Standish & Preece are putting out some good work, and tell us that our Magazine is a big help in their business. In their work posing and lighting are almost invariably skilfully handled, and the spacing of their pictures deserves a word of praise.

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OUR PICTURES.

Our readers, we are sure, will find a study well worthy of their careful attention in the splendid portrait of a veteran clergyman which serves as our frontispiece this time. About ten years ago the subject of this portrait was a guest at the Windsor Hotel, in Montreal. He was attracted by the "beautiful photographs" displayed in an apartment on the lower floor of the hotel, the work of Messrs. Wm. Notman & Son, whose main studio is in the "Windsor" building. The young lady in attendance notified Mr. Notman of the presence of the visitor, and Mr. Notman (as he writes us) "seeing possibilities for a fine picture" in him, invited him to sit for a negative. One of the results of this interview is before you. We heard of it, and made application at once to Messrs. Notman for a copy of the photograph, having first obtained permission from the distinguished subject to use his picture as a help to the study of art for our readers: and here it is, a pictorial photograph, an evidence of the generosity of the photographer and of the gentleman subject and of the interest which is felt in our art by almost all intelligent people. We congratulate ourselves upon being able to present such a fine picture of its class for the study of our readers. It is but rarely that we are able to print such a fine portrait *of a man* for our frontispiece. It is admirably posed and lighted and in every way fine in technique.

At a permitted interview with the reverend gentleman we learned that he has been the pastor of a church in a Massachusetts village for about fifty-five years and that he is now nearly eighty-five years of age. He is small of person, but vigorous of thought, and a rare and pleasant personage, as one may judge from the face presented for our study. He related some of his old-time experiences. When photography was born and when the first railroad to "Boston" was constructed he was well prepared for his work. He remembers the days of stage coaches, footwarmers, spinning-wheels and sideboards, and when a whole township of several towns and villages gave one name to the whole group. He ever feels a lively interest in our art and seemed interested to display some of his collection of photographs. Among the last was one of two oak trees which had grown together as one by an outreaching limb from each. This is not an uncommon occurrence in his neighborhood, where he, by his long life, has become a connecting branch between the distant past and the present. Beloved and revered as he is by a large parish, is it any wonder that we find so much that is beautiful in his benign face? And yet when we called him a veteran, he said "I am not old!"

With his picture Messrs. Notman also sent us several other fine "pictures of men" which are only less excellent than the first one named because of the difference in the personnel of the subjects. All are worthy of study and careful comparison with your own everyday work. The originals are of 8 x 10 size and are "good old-fashioned albumen prints" of excellent quality. These with the portrait of our old friend Dr. G. G. Rockwood, enable us to make up a characteristic "gentlemen's number" of our Magazine which ought to take a high place in the issues of 1902.

The engraved supplement by Mr. George W. De Vore, of Leamington, Canada, presented in this issue, has an interest over and above that belonging to it as a good example of portraiture. It came with half a dozen others, equal in general quality, and the subjoined letter which tells the story:

"I am mailing herewith a few photographs produced with a lens of my own manufacture. Beginning with the glass in its rough state, I ground the lenses, making for myself the necessary tools. The lens is 2 inches in diameter with an equivalent focus of about 16 inches. It was intended for work 11 x 14 or smaller, and you can judge of its workmanship by the results I send. I have not been a photographer more than four years, having spent twenty-five years in the watchmaking and jewelry business. After grinding and finishing the lenses I mounted

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them in a tube of my own manufacture, and I also made the camera-box with which the lens was used. This is of cherry wood 'with mahogany finish,' as the catalogues express it, with a double plate holder for plates 11 x 14, fitted with carriers for smaller plates. The back has a double swing movement, and the bellows extension is 48 inches. I also made a view lens and shutter which give me good results.

"For some time I have studied portrait painting, and this helps me in posing and lighting my subjects. As you will see by my prints, I do not believe in retouching all the life out of my subjects. It is better to make the lens give us what is needed, and so save risky work afterward."

This is worth recording, because few photographers give that study to their profession which would enable them to construct their own apparatus or to understand its limitations and uses as those do who construct them. Mr. De Vore shows his earnestness and has applied his skill and knowledge in a profitable way. We commend his ingenuity and success.

THREESCORE YEARS AND TEN.

A FEW days ago, looking over the "Photo-secessionists" exhibition of prints at the National Arts Club of our city we literally bumped up against our old co-worker, Mr. George G. Rockwood. He was absorbed in the exhibits, and we had not noticed each other's presence. A few words passed, and we left Mr. Rockwood with the pictures. He was accompanied by his associate under the skylight. The incident is recorded because it was typical of the man who, after almost half a century in professional photography, still had enthusiasm sufficient to leave his studio and spend an hour of the business day to study the productions of America's extremists in pictorial photography.

On the 12th of April Mr. Rockwood will reach the limit of human usefulness—threescore years and ten—according to the Psalmist. Of these threescore and ten years not less than forty-seven have been spent in photography. Noteworthy as this is, it is still more remarkable that, after all these years of exacting work, Mr. Rockwood is really younger—has more vim and freshness—than most of the younger men in the profession within our acquaintance. He is, in fact, as we said some years ago, "The oldest and the youngest photographer in New York." Only those who are familiar with the strenuous life of the metropolis can fully appreciate his youthfulness and the miracle of it.

Mr. Rockwood was born in 1832. He began his career as a photographer in St. Louis, in the summer of 1855, and opened his studio in New York in 1859. His life, therefore, covers the largest part of the history of photography in America. It would require a long excursion through the files of this MAGAZINE to give an adequate account of his busy life. Briefly, we may say that Mr. Rockwood has been the pioneer, or has taken a leading part in every improvement introduced in American photography. He was the first to introduce the carte-de-visite in this country, and his first carte-de-visite sitter was Baron Rothschild, who brought to New York the first examples of the carte-de-visite portrait, made by Le Jeune, of Paris. In this, therefore, America was not far behind Europe. He was also one of the first users of the dry plate on this side of the Atlantic, securing his first consignment from London, and then placed an order with George Eastman for the first lot by this manufacturer.

In the same way Mr. Rockwood has introduced other important novelties. His ground-floor studio was the first of its kind in New York; he was among the earliest to make a practical success of electric light portraiture, and his work in this direction has not been surpassed. His famous "Triplex" portraits—three poses of a child on a cabinet card—first suggested the multiple portraits which are now so popular. Similarly his solar enlargements, composite pictures, and those wonderful portraits of children which brought him fame a quarter of a century ago, with many other innovations, gave him a proud position among American photographers.

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His inventions in photo-relief, photo-mechanical process, and other methods are too numerous to mention in detail. In the portraiture of celebrities, also, Mr. Rockwood has done notable work. For many years his studio, adjoining Tiffany's, on Union Square, was the rendezvous of many noteworthy Americans and prominent men from Europe. We doubt whether any other living photographer has accomplished so much in so many different fields of activity in the same period of time. And yet photography has not wholly absorbed Mr. Rockwood's energies—so typically is he "the restless American" of tradition and popular phrase. He has been a constant traveller, visiting European art galleries year after year in search of fresh inspiration and new ideas for his activities. The broadening effect of these journeys abroad, and of his wide culture, are apparent in his personality and conversation. He is one of the most delightful of men to meet and know, intensely human, generously sympathetic, a good-humored philosopher, combining ripe experience and learning without sourness or pessimism.

For many years Mr. Rockwood has spent his leisure in church music and the preparation of lectures. In these directions his achievements were recognized by Columbia College a few years ago by the conferring upon him of the degree of Doctor of Philosophy. His contributions to the literature of photography, to periodicals, and to the daily press would make a bulky volume. If assembled in one place it would be seen in them that his greatest desire has been to make his knowledge and experience useful to the world.

All these things, and as many more left unsaid, are well known to American photographers, but we cannot hold back from some mention of them in view of the event of April 12th, with affectionate greeting to our old friend and the wish that he may have another half-century at least among us in health and happiness.

The portrait of Mr. Rockwood, given among our supplements, is a capital likeness of him, and was taken quite recently. It gives us practically the man himself with all his qualities. We are glad to be able to share it with the craft.

A STARCH-GUM-PIGMENT PROCESS.

BY E. W. FOXLEE.

In a previous article I made mention of the fact that other colloid substances besides gelatine, when sensitized with the bichromates, had the property of transmitting the action of light set up in them to other substances, and would be continued in them. This action, I mentioned, would continue even when the free bichromate had been washed away and the print afterward dried, and without the presence of any bichromate salt in the second substance.

It is on this property that the present method of working the gum-pigment process is based, and the colloid used for the initial print, in this instance, is a starch (arrowroot), and the second gum-arabic. Whether this system is actually new or not I cannot say, but I have never seen anything on the subject published before. Be that as it may, here are the practical details of the process, which yield good results, and which may be of service to some gum-bichromate workers.

The paper I have mostly used in my experiments has been the "Rives 10 kilo," as made for albumenizing. Other hard, sized papers will answer as well, but some will require a thicker coating—or, perhaps, two coatings—of the starch to thoroughly fill the pores of the paper; for, unless that is done, the image will be, more or less, sunk in the body of the paper, and thus be lacking in vigor and transparency in the shadows when the picture is finished. The arrowroot paste is made as follows:

Bermuda Arrowroot .	20 g.	½ oz.
Water	650 c.c.	16 ozs.

The arrowroot is intimately mixed with the water (cold), and then quickly brought to the boil, being vigorously stirred the while.

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It is then allowed to boil gently, with continual stirring, for five minutes, and is then emptied out into a basin and allowed to get cold. It is better to prepare the paste overnight. The more solid portion which will have formed on the surface is removed, and the paste well beaten or whisked up with a spoon or fork. This treatment will, to an extent, reduce its glutinosity, and enable an even coating on the paper to be the more easily obtained. The paper should be pinned down on a flat board, and the paste applied with a broad, flat, hog-hair varnish brush, working it well into the paper, first lengthwise and then crosswise. The coating of arrowroot must be evenly applied, otherwise the thicker portions will be darker than the thinner ones in the finished picture. The paper is then hung up to dry. It will, of course, keep any length of time if kept dry, so that a quantity may be prepared at a time.

The paper is sensitized, as required, by floating it on a dilute solution of bichromate of potash, as under:

Bichromate of Potash .	30 g.	1 oz.
Water	1500 c.c.	50 ozs.

On this solution the paper is floated for about a minute and a half, and then hung up to dry in the dark, when it is ready for printing. It should be used within a few days of sensitizing. The arrowroot paper, after sensitizing, will have a somewhat paler color than that prepared with gelatine and sensitized on the same strength solution. The printing should be carried to sufficient depth to show faint detail in the highest lights of the negative, but it is undesirable to over-print. It may here be mentioned that, as the paper is of a paler tint than that with gelatine, the image will necessarily be correspondingly fainter also, and that the printing should be judged accordingly. When the print is dark enough it is washed in cold water to remove the free bichromate, and then hung up to dry. The washing may be done in running water, or in several changes, until the pale-yellow tint disappears from the lights of the print when it is looked through against the light. It is not advisable that the washing be continued after that, as a prolonged soaking in water would eventually dissolve out nearly the whole of the visible image, which it is not desirable to do. After washing the prints are hung up to dry. In this state they may be kept until a convenient time for pigmenting. How long they will keep in this state I am unable to say, as I have not kept them beyond a few weeks, during which period, however, they did not suffer from the keeping.

PIGMENTING THE PRINTS.

Stock Solution of Gum.

Good Turkey or Senegal Gum	200 g.	8 ozs.
Water	400 g.	16 "

Dissolve in cold water and strain through fine muslin. The mucilage should not be squeezed through the muslin, as, with some samples of gum, there is a certain portion that is only semi-soluble and that would be forced through, and it is not desirable to use that portion. When strained, a few drops of carbolic acid are added as an antiseptic; it may then be kept for months without deterioration.

Pigmenting Solution.

Stock Solution of Gum .	16 c.c.	4 drs.
Water	24 "	6 "
Glycerine	8 "	2 "
Dilute Sulphuric Acid (1–10)	4 "	1 dr.

This mixture is best used within two or three days of mixing. The water, glycerine, and acid are first mixed together, and then added to the gum solution, and the whole well shaken together. It will be noted that this solution differs somewhat from that given for gelatined paper in the previous article, sulphuric acid being substituted for the acetic, as I have found it to work better with the starched paper than the acetic does.

The color employed is quite a matter of taste, but any of the moist water-colors sold in tubes will answer. The proportion of pigment to solution is simply a matter of judgment. Too large a proportion will yield hard prints, and too small a one flat ones. More pigment should be used for prints from flat negatives and less for those from strong ones. A little of the pigment is squeezed out on a glass plate, and some of the solution added and intimately mixed with a palette knife. The pigmented gum is best applied to the print with a broad, soft varnish brush, and with not too much force, worked first in one direction and then in the other until a fairly

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even coating is obtained. It is then stippled over with a badger-hair softener to further equalize it. Although a perfectly even coating on the print is not so imperative as when it has to be printed through—as it has an ordinary gum-bichromate process—it should be as even as can be obtained. The pigmented print is then allowed to dry, and next day it may be developed; or it may be kept for two or three weeks, and perhaps for longer, without suffering any ill effects.

The print is developed by floating it, face downward, for five or six minutes on cold water, and then placing it on a glass plate, face upward, and then going lightly over the surface with a broad, flat camel's-hair brush well charged with water, when the color not forming the image will dissolve away. The development is usually completed in about half an hour, or it may take an hour or more; but it is not advisable to hurry it. If it should happen that at the end of, say, ten minutes' floating on the cold water, the pigment shows but little signs of softening, slightly tepid water may be substituted, which will hasten the solution; but that I have seldom found necessary. When the print is developed and dried it is ready for mounting.

I have already mentioned that I have only been interested in the process in its scientific aspect—the fact that a printed image in a bichromated colloid can have all the free bichromate removed and will still "set off," or be transmitted to a second colloid that has not been bichromated or exposed to light—and not as a picture-making process for my own use. I am not an admirer of gum processes, for I much prefer the carbon process for the production of permanent pictures. However, there are admirers of the process, and possibly the modification here described may be of service to some, inasmuch as, with it, there is a visible image to begin with as a guide to right exposure, and, as the pigmented coating has not to be printed through, it is not so imperative that it should be absolutely even, neither is it so essential that the proportion of the pigment to gum be so nicely adjusted as when it has.

Furthermore, there is greater independence as to the character of the negatives employed, as almost any will suffice if the proportions of pigment to gum be regulated according to it. Of course, the method lends itself as much to "faking" as does the usual gum process. I should like it to be distinctly understood that I do not claim that the proportions that I have given, or that the method of working described, cannot be improved upon, as I believe they can be by those who are more interested in its practical application as a picture-making process than I am myself. —*Photographic News.*

PHOTOGRAPHIC TRICKS.

Almost since the beginning of photography there have been freak pictures, usually catering to a very cheap class of trade. Everyone has seen those Niagara souvenirs in which a head protrudes from a cask floating on the waters; or those still earlier and cruder efforts where the sitter holds a sketch of some headless monstrosity immediately beneath his chin, and so allies himself to a flying goose, or a clown, or a mule. Rather more advanced come doubles and similar combination effects, which often prove profitable business bringers and which have been much popularized of late by the effective work of multiplying-holders.

One of the most effective tricks of photography has been to suggest motion by means of wind-blown hair or drapery. This has been done by means of an electric fan, and for a head only this method is good. As the hair flutters in the breeze the exposure must be instantaneous. Perhaps the least satisfactory way of obtaining breezy motion is by means of deliberate posing, where the hair is fastened to a screen of very fine wire and the drapery held outward by means of other wires or threads.

The best way of producing these pictures is by means of a special arrangement by which the figure is laid on her side. To do this the background is hung on its side. Through it, and directly toward the camera,

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two stout iron gas-pipes are placed, and on these a board is laid. Provision for holding these pipes behind the background is the only part which needs more than the slightest of arranging. A "floor" standing perpendicular to the true floor of the studio and at right angles to the background is added. This may be lightly built of wood, although the top of a table, or a large drawing-board, or even canvas, may be used. We have now all arrangements for a picture (except the figure), and they are for a picture turned on its side. The figure now lies on this board with a foot, or feet, just touching the "floor;" and the hair and drapery, by simply hanging down, give an effect which will suggest wind-driven when the picture is mounted to make the figure appear upright. Unless a very rapid exposure can be given by daylight artificial light should be used. It often requires a slight effort to remain for several seconds as if naturally, and any strained effect or lack of spontaneity would be fatal to success.

One of the most successful of theatrical photographers gets some very fine acrobatic effects by a simple means. His customers are very often from the vaudeville stage, and appear before the camera in costume. He uses daylight solely, but by having abundance of it, rapid plates, and rapid lenses, he usually can get his exposures down to a fraction of a second. His figures are posed before a white, continuous background, which is in the print neither back- nor foreground in the usual sense of the word; for it is often lighted to be absolutely a flat and even white, without trace of work or shadow. Very curious tumbling effects have been obtained by this arrangement, the subject posing in the required attitude, but resting on hands or feet. When the print is trimmed it is so arranged as to suggest that the figure is performing in space—presumably among trapezes. The earliest of this man's works in this line were a simple series of a man performing some curious contortions, his hands being held in the air in such a way that the print could be mounted upside down as though the man were performing on his hands. These results were crude and there were several little errors, but they caught on among the class they were intended for.

A boy tumbling from a window is a taking subject in some showcases. In this the background is laid on the floor, and the camera points at it from above. The background represents the exterior of a house, and a window is open. Below the window the faller sprawls on the background, arms and legs wildly extended, and, if he can possibly conjure it up, a look of anguish on his face. Taken directly from above this print will, when properly trimmed, be sufficiently realistic to deceive the multitude. Variants of this theme are easy. If no outdoor background is available (and the photographer is scarcely likely to include a mere house side among his selections) the effect may be obtained indoors by falling from a step-ladder. Here a picture should be introduced as a motive of ascending the ladder, and a duster might be clutched in one hand. In this picture, too, the upright floor should be introduced to hold the steps, which may either be opened, and standing on the floor sideways to the wall, or may be leaning against the wall.

A NEW LIGHT.

At a recent meeting of the American Society of Mechanical Engineers, New York, a new light invented by Mr. Peter Hewitt was tested. The lamp consists simply of a glass tube with a bulb at one end, in which is introduced gas generated from mercury. The tubes, when filled, are connected with the ordinary electric power in any building and the current turned on. The gas acts as the conductor, and as soon as the switch is turned the tube is flooded with light. Four of these tubes were placed at regular intervals around the gallery of the auditorium, and one was hung from the ceiling. The incandescent lights were also turned on, and the light from these looked like jets of uncertain yellow flame as compared with the light in Mr. Hewitt's lamps.

Mr. Hewitt read a paper in which he

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described his new lamp. In the course of it he said: "The mercury gas lamps exhibited are operated on the standard Edison 118-volt direct-current circuit installed in this building, and lamps of this class consume amounts varying from 1 to 6 ampères, and the efficiency is approximately ½ watt per spherical candle-power. Under better conditions as high an efficiency as ¼ watt per spherical candle-power has been obtained, determined by careful and accurate measurements. I have made lamps with diameter of bore less than ⅛ inch and as large as 3 inches in length up to over 10 feet, giving from less than 10 candles up to fully 3000. Lamps of very small bores give more trouble in manufacture and operation than those of moderate size.

"Lamps of innumerable shapes and dimensions have been constructed, and great variation of candle-power for various diameters obtained. There appears no reason why lamps may not be made of any size required and of any desired candle-power per inch within wide limits, the only limitation appearing being that imposed by softening of the glass when too many candle-power per inch are produced. The general rules established regarding their operation hold good so far as examined, and it is possible to predetermine with almost absolute exactness the voltage, current consumption, and candle-power of a lamp when the manufacture is perfect.

"The light produced by pure mercury gas comprised orange-yellow, lemon-yellow, green, blue, blue-violet, and violet, and although all shades of these colors may not be present, their absence would not be so seriously felt were it not for the absence of the red. For some purposes the lack of red in the spectrum is objectionable, but for many uses it is a positive advantage.

"For shop work, draughting, reading and other work where the eye is called upon for continued strain, the absence of red is an advantage, for I have found light without the red is much less tiring to the eyes than with it. It is possible to transform some waves of this light, especially the yellow light, into red light, and thus in a measure to overcome this defect where required for general indoor illumination. A moderate amount of ordinary incandescent light interspersed with the mercury gas electric light serves to supply the deficiency, and the mixture may be made most satisfactory. For ordinary street lighting purposes the mercury is available, even without the red, and it should be noticed that this light has very great penetrating power, and seems to be effective through greater distances than an equivalent amount of measured candle-power from the ordinary incandescent lamp. This may be due to the fact that the waves of the red light are less penetrating than those waves which are present in the mercury light, and hence the least valuable portion of the spectrum having such illuminating effects is omitted, and the energy is practically expended in the more useful portions of the spectrum.

"When it is considered that this light, when obtained with mercury gas, has an efficiency at least eight times as great as that obtained by the ordinary incandescent lamp, it will be appreciated that it has had its use in places where lack of the red is not important, for the economy of operation will much more than compensate for the somewhat unnatural color given to illuminated objects."

THE RECEPTION-ROOM.

BY A. LOCKETT.

An attractive and pleasing reception-room is certainly one of the first requirements of the professional photographer who wishes to make his business a commercial success. It ranks, perhaps, only second in importance to the showcase as a bait and lure to possible customers. It is where the sitter obtains his first impressions, those initial suggestions of coming possibilities which have such an effect on his order, immediate or ultimate. Here he, or she, is either charmed into a gra-

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cious temper, which he carries into the studio, to the immense advantage of the operator, or rendered nervous and irritable, conditions so often fatal to the securing of a satisfactory portrait. How our ideas have changed, or are changing, of late years as to the treatment and decoration of the reception-room! We can all remember the old variety, where, in whatever direction the eye might look, it fell on nothing but photographs, large and small, in highly ornate frames, with gilt or plush mounts. A bewilderment of pictures and frames, all clashing with and disturbing each other, and insensibly producing in the prospective sitter a sense of worry and distraction. Then that almost universal bell at the entrance, which H. P. Robinson spoke of so feelingly, which "went off over your head, upsetting your nerves and making you feel like an intruder that had broken something!" We don't often hear that bell nowadays, and we do generally find someone in the reception-room ready to attend to visitors without a hasty and hurried rush from upstairs or some other distant quarter. In probably the majority of studios the reception-rooms are now really artistic and restful in effect, the specimens, while in quite sufficient number and well displayed, are yet not allowed to predominate sufficiently to destroy the idea of comfort and fitness. The photographs are beginning, too, to be used more decoratively—that is to say, as items in the general scheme of furnishing, rather than on the shop-window principle of display. And this is, of course, a great step in the right direction, and a really politic one, for it teaches the public in how many ways the products of the camera may be effectively employed in the making of "the House Beautiful." Photographs are capable of being wonderfully decorative, as some of our leading art furnishers and designers appear to understand. This is not so well comprehended by the general public, as many an otherwise tastefully furnished drawing-room bears witness. We see a multitude of photographs in more or less gaudy frames scattered confusedly over the walls without any very clearly defined attempt to secure an harmonious effect. The room is probably prettily arranged as to the rest, but the unfortunate photographs are simply thrown in to fill up the bare spaces. Now, here is the photographer's grand opportunity to demonstrate the decorative possibilities of his productions. Let him make his reception-room a silent but eloquent witness to the added beauty that any room may possess when photographs, correctly and tastefully framed and displayed, are used in an intelligent and appreciative manner to assist the general scheme.

Many of our modern reception-rooms are models of elegance and comfort, where one might, indeed, feel inclined to while away a morning or an afternoon. The proprietors appreciate the undoubted wisdom of pleasing and soothing the sitter to the utmost of their power, and adapt all their internal arrangements with that end in view. We remember a certain photographer who argued against making his reception-room too comfortable, on the ground that it was difficult enough as it was to get rid of the sitters without offering additional inducements to them to waste his time. This was a very original and unusual view of the question. No doubt its propounder had gleaned wisdom by experience, but one cannot help thinking his experience must have been peculiar and out of the ordinary run. Cheerfulness should be the keynote of the reception-room. The receptionist should be chatty and agreeable to all they have to deal with; not too much so, however; all good things may be carried to excess, and the slightest familiarity and lack of respect must be guarded against. But the majority of people who go to have their photographs taken undoubtedly enjoy a little talking, and often thereby give valuable hints as to the best way of pleasing them in the execution of their order. We know some studios where the sitters are received in a business-like, unemotional way, calculated to produce anything but gratification, and hastily dismissed as if their presence were a grievance. It is surely needless to point out the foolishness and undesirability of such behavior. Certainly there are people who will, if allowed, waste unlimited time in irrelevant talk, and give the smallest of orders; these belong to the genus of those terrors of the linendraper, who demand to examine half the contents of the shop and

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finally purchase a packet of pins. But the generality of the photographer's clients are of a more liberal mould, and, on the whole, he will gain rather than lose by admitting a generous amount of conversation and gossip. There should be no appearance of hurry and rush in the doings of the reception-room. A little time wasted here will be amply made up elsewhere. Let the customers or inquirers be as leisurely as they like, let them stare lazily around at the pictures, or repose themselves in the most comfortable and luxurious of chairs or settees—it all helps to fill them with that contented and amiable feeling which causes the purse to open and the check-book to come out!

It is customary in some establishments to fill up the receptionist's spare moments with retouching, mounting, spotting and like employment, which are often done in the reception-room. It is a moot point whether, if it can possibly be avoided, this is a wise thing to do. There are many who have an apparently well-founded opinion that it is bad policy to allow the public to see any of the work in course of completion. It tends, they say, to make people over-critical and increases the difficulty of pleasing them. There are certain peculiarities about photography which differentiate it from most other vocations, and one of them is the decided undesirability of allowing any lay person not cognizant of its methods and mysteries to view any but the finished product of our studios. The work seems to be done too easily and lightly, as seen by the inexpert onlooker, with the result that he unconsciously values it less, and gives more rein to that spirit of independent inquiry which paves the way for resittings or vexatious alterations to proofs. At least that is the carefully considered pronouncement of some who have no reason to be ashamed of their place in the photographic world, and cannot certainly be charged with any lack of practical business experience. It is only fair, however, to state that their judgment is contradicted by other equally weighty authorities who consider that work of the kind mentioned is not out of place in the reception-room. It used to be an unwritten law with many photographers that their receptionists should be attired in sober black. H. P. Robinson, indeed, gives his benediction to the idea, on the ground that brighter colors tended to clash with the more subdued hues of the specimens. A certain well-known artist, however, who was lately appealed to on this point by a photographic comrade, expressed his emphatic dissent. You might as well, he said, compel all the visitors to the Royal Academy to be garbed in sable raiment. If it were desired to render the reception-room pleasant and acceptable to the average mortal he was strongly of opinion that the assistants therein should wear something more human and less funereal. So spoke the painter; perhaps he forgot that a collection of monochromatic photographs is hardly to be compared to or treated in the same way as the rich blaze of color in a picture gallery; still, no doubt, his were words of wisdom, and worth pondering by his brethren of the camera. Brightness, comfort, courteous and tactful treatment of visitors—these should be the foundation principles of the reception-room and of the whole establishment. With these inestimable qualities borne well in mind, and the simultaneous production of good work, it is probable that even in these days of fierce competition no photographer need complain of dearth of business unless, indeed, his case presents exceptional and unusual features.—*British Journal of Photography.*

TONING BROMIDE PRINTS.*

THE large attendance at the technical meeting of the Glasgow and West of Scotland Amateur Association when Mr. Wm. Goodwin demonstrated the various methods of toning bromide prints quite bore out his opening remark that this is an increasingly popular method of securing variety in the tones of bromide enlargements. Amateurs, he said, had been content for a long time with the black and white bro-

* Notes of a demonstration by Mr. William Goodwin reported in the *Amateur Photographer.*

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mide print, but the use of carbon had led to greater attention being given to the securing of results similar to those obtainable with carbon. There was no novelty in the process.

The Early Sulphide Method. Abney gave particulars of the ammonium sulphide bath in 1882, and there was no doubt that sulphide of silver was as permanent a process as could be chosen. The smell was the great objection to the process, and if adopted it must be carried out in the open air. With sulphide of silver one could obtain black, deep brown, or yellowish-brown tones. The formula for this method is 1 part of ammonium sulphide in 10 parts of water, in which the print is soaked till toned. Certain makes of bromide paper, however, will not yield brown tones by this process.

The Hypo-Alum Method. The next process described was the Eastman hypo-alum bath, used at 120°. This gives very good tones without any difficulty other than those of a mechanical nature. One cause of failure lay in keeping the tray over a small circular gas stove, heating the centre, while the edges were kept at a much lower temperature. Placed on the top of a range and warmed equally all over, there should be no difficulty in obtaining even results. This bath, it was not generally known, does equally well cold. In summer time the prints tone in a night; in very cold winter weather they might take three days. He showed two prints toned in the hot and cold baths, the cold toned being perhaps the better. The formula is: alum 1 ounce, hypo 10 ounces, boiling water 70 ounces. It should be kept for some days before use with a waste bromide print immersed in it, which reduces the tendency to destroy fine detail, which is noticeable in a new bath.

A Sulphide after Reduction. The third process, and the one preferred by the demonstrator before all others, was that in which the bromide print is reduced to either chloride, iodide, or bromide of silver. Enlargements to be toned by this process should be accurately timed by means of trial slips, and development continued till the print has the density, on looking through it, of a fairly plucky negative. When fixed it will appear overprinted. In reducing prints to chloride of silver the bath is made as follows:

Bichromate of potash . .	10 grains
Water	1 ounce
To which add—	
Hydrochloric acid . . .	10 minims.

There is no advantage in having the bichromate strong, as the print is stained and the stain has to be washed out. He had heard the use of toned bromide papers being advocated when subsequent toning was intended, but he saw no objection to the use of white paper, there being nothing against a brown tone on white paper. In this bath the image nearly disappears, and the prints are stained yellow. This stain could be washed out with water, but it is got rid of quicker by the use of a fairly strong solution of powdered alum, accomplishing in a few minutes what it would take water hours to do. After this washing the whites are pure and the alum solution yellow. To sulphurize this image any sulphide will do. Sodium sulphide Mr. Goodwin had seen recommended. It has a more tolerable smell, but he found that it softened the gelatine and the sizing of the paper, and for the latter reason alone he would not care to use it for large enlargements.

Variations. In his own work he used ammonium sulphide, making up a solution not weaker than 1 per cent. A solution weaker than that gave a weak golden color, suitable only for special subjects. When poured over, a fine brown tone is at once obtained. It is necessary to keep the bichromate and hydrochloric solutions separate; economy had no influence, as one pennyworth of each would last a lifetime, therefore a fresh solution should always be used. For those who wish a stock solution he recommended 1 part of a 10 per cent. solution of copper sulphate and 2 parts of a 10 per cent. solution of common salt. In using this solution the prints must be thoroughly washed before pouring on the sulphide, or a beautifully stained print will be got.

Bleached Prints and Mercury. At the next step Mr. Goodwin showed a print partially bleached with bichloride of mercury, and very thoroughly washed. Applying a weak hypo solution the result was

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a very pretty brown which he saw no reason to doubt would be permanent.

Another sulphide process made use of was Schlippe's salts, but he had never been able to succeed with it, being unable to avoid staining the prints, though the color, a very unique orange-brown, had much to recommend it.

Improvement of Defective Prints. Passing on to deal with the treatment of prints not up to the mark, he took a greatly over-exposed print, flat and fogged, and then, after clearing the whites with Farmer's reducer, made up an intensifier—the best he knew, either for negatives or prints—consisting of a 10 per cent. solution of sulphite of soda, to which he added a little mercuric iodide. With this solution the print became visibly stronger. Washed in water, it became a dirty yellow-brown. Making up an ordinary amidol developer and pouring it over, in a minute it became twice as dense at least, and warm black in color. By using ammonium sulphide a warmer tone would have been got, but a prolonged washing would have been necessary before toning. This process was also useful, he said, for altering the color of a badly-colored print, though all right otherwise.

In closing, Mr. Goodwin, for the sake of completing the survey of the toning processes, demonstrated the various stages of uranium copper and iron toning, and used, to illustrate his remarks, the half of a stereoscopic print in every case. By this means he had an ordinary black and white print to show alongside each of the toned prints he handed round after treatment.

ON THE REVERSAL OF THE PHOTOGRAPHIC IMAGE AND ITS SUBSEQUENT DEVELOPMENT IN ACTINIC LIGHT.*

BY M. I. WILBERT.

PROFESSOR Francis E. Nipher, during the past year, presented several communications to the Academy of Science of St. Louis that have renewed the general interest in the subject of sensitive silver salts and their characteristic behavior to the action of actinic light. The peculiar fact that these silver salts have the property of assuming a certain physical condition that makes them particularly susceptible to the action of reducing agents, and also that an extended exposure to actinic light brings about a reversal of this peculiar physical condition, were facts that had been observed long before Professor Nipher made his interesting communications. The feature of his experiments that was original, and that was all that Professor Nipher claimed to be original, is the possibility of developing these reversed photographic images in actinic light.

The statement of this fact, when first made, appeared to be so different to what we were accustomed, in ordinary photography, that it created wide-spread attention, and caused numerous experiments to be made along the same lines.

Following up a suggestion that was made before the Photographic Section of the Franklin Institute some two months ago, I made several experiments along these same lines. These experiments appeared to me to be interesting, and to some extent also instructive. Professor Nipher, in one of his early communications, states that a photographic plate, even after it had been exposed for weeks to diffused daylight, would still give an image if exposed to the direct spark discharge of an induction coil or a static machine, and subsequently developed, either in the dark-room or in bright daylight.

To test this statement I allowed several pieces of damaged photographic plates to lay exposed to bright light for ten days or two weeks, and then subjected them to a spark discharge; the resulting electographs were then developed in bright light, and, in each case, the resulting picture showed the action of the electric spark clearly. In one case, shown here, a coin was placed in the centre of a photographic plate and connected with one terminal of the induc-

* A paper read before the Section of Photography and Microscopy, Franklin Institute, and reprinted from the Journal of the Institute.

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tion coil. In the resulting picture we see plainly the radiations of the spark in all directions. The most interesting part of this particular experiment, however, is the fact that the area immediately under the coin and a very narrow zone around it has been completely reversed, while the spark radiations, with few exceptions, show dark against the fogged background of the plate.

Following up Professor Nipher's own experiments, I exposed a very sensitive photographic plate under a positive, in this case a dense lantern-slide, for five minutes, and then developed the same at a window with northern exposure, using an old metol-hydroquinone developer without any further restrainer. The resulting picture makes a presentable lantern-slide, and represents fairly the condition of the original positive.

To get an idea of the length of time necessary to obtain the best results under similar conditions, I interposed between the plate and positive a piece of heavy black paper. By withdrawing this paper gradually I was able to make on the same plate exposures of one, two, four and eight minutes. As will be seen by an inspection of this picture, the portion of the plate that has not had any exposure under the positive is entirely opaque; that portion that was exposed for one minute is very dense, but the portions of the picture representing the deepest shadows in the original picture are not entirely reversed. The portion of the plate exposed for two minutes is next in density, and here we have complete reversal of all portions of the picture. The parts that were exposed four and eight minutes respectively are not nearly as dense, and differ but little in their general appearance. This is a feature that should especially be noted, as it appears to me to be evidence of a protective influence of the upper layers of changed silver salts, similar to what we would naturally expect to have had in the plates that had been exposed to diffused daylight for weeks. This experiment was gone over on several occasions with uniform results. Even in cases where the highest exposures were as long as an hour, or the equivalent of many hours' exposure in a camera, the high lights came out quite clear, barring the general vagueness that we see in all reversed pictures.

A series of exposures made with a camera were, however, of even greater interest to me, showing, as they do, the very great range of exposure that is possible with rapid photographic plates under practically the same conditions of illumination and development.

The subject was Girard College in bright sunlight or at near mid-day. The first picture is a negative made with an exposure of approximately half a second, using a Beck wide angle lens having a 128 stop. The resulting picture developed with fresh normal metol-hydroquinone developer came up to its present density in a little over four minutes after being placed in the developing solution, and is, if anything, a little overexposed.

The next picture had exactly the same amount of exposure with a sixteen stop, giving it approximately eight times the amount of light of the first; the plate developed very much more rapidly, but is still a very fair negative.

The next one of the series was exposed for five seconds under exactly the same conditions as the previous one, using the sixteen stop, and the result is still a negative, though rather thin; but when we consider that it has had eighty times the light that the first negative had, we will appreciate that the possible range of exposure is really remarkable.

The next plate had an exposure of fifty seconds, and shows traces of general fog; you can see, however, that there are distinct traces of reversal; the high lights are completely reversed and almost clear. This plate would probably come somewhere near the so-called zero condition, where the positive and negative conditions of the plate would nearly balance each other, and give as result of this a general fog.

Again, increasing our exposure, this time to ten minutes, and developing the picture in the dark-room, we obtained a completely reversed picture that is rather dense in the shadows on account of the activity of the developer; under these conditions, this plate did not require more than three minutes in the developing solution, and appeared to flash up very rapidly.

The next picture was given the same exposure, but developed at an unprotected window having a northern exposure—in

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fact, the same window from which the plate had been exposed in the camera. This required eight or nine minutes to develop, and the conditions of the development were quite different. When the plate was first taken from the camera there was plainly seen a distinct outline of the picture as a negative. On placing the plate in the developing solution this negative image gradually faded until the plate was perfectly blank, then the edges of the plate that had been protected by the holder began to darken, and following this the positive image gradually but slowly developed, the process requiring at least three times the time that was necessary in the dark-room.

Some further experiments were made with a view of testing the action of various reducing agents; the exposure in these cases was twenty-five minutes, and more or less satisfactory results were obtained by using pyrogallic acid, amidol, eikonogen, metol, metol-hydroquinone, and hydroquinone as the reducing agents. The first four did not give very satisfactory results, as their action appears to be too rapid and rather irregular; the fifth was the developer used in the experiments alluded to above; while the sixth, hydroquinone, was used with and without an alkali, with interesting results. The first picture, which I show you, had the normal amount of alkali, as advised in the formula given by the manufacturer of the plates that were used. This plate shows up quite clearly and is quite black.

The next plate was developed with a developer having but half the amount of alkali, and, as you can see, it has a distinctly brown cast of color; it was also slower in development, although not markedly so.

The third plate was developed without the addition of any alkali, and presents a reddish-brown appearance in color, though sharp and distinct in all details of the picture. Speculation as to the principles involved in these processes are perhaps out of order, but it appears to me as though the action of light on sensitive silver salts was in the first stage a purely physical one, disarranging the equilibrium of the molecules of the silver salt and making them susceptible to chemical reducing agents; prolonged action brings about a chemical change that produces opaque metallic silver or a silver oxide, and this in turn protects the silver bromide molecules immediately below it from further action of light; the physical change is going on in other portions of the plate, and these in turn are susceptible of reducing by proper chemical agents, while the portion that has been acted on chemically is not. The change brought about by reducing agents is much more intense and opaque than is that produced by light, thus giving us a dark picture against a gray or hazy background. As evidence of this I would say that so far I have not seen any reversed pictures in which the high lights were represented by perfectly clear glass.

More evidence that the ultimate action of light is chemical is found in the fact that we may expose a plate under a negative for a sufficient length of time to produce the outlines of the picture distinctly, then fix the resulting plate in hyposulphite solution and still retain the faint outline of the positive, and this in turn may be intensified so as to be distinctly visible.

Under proper conditions we would no doubt be able to make photographic negatives in this way without the use of a dark-room; that is, by first dissolving out the unchanged silver salts in a fixing bath and subsequently intensifying the very weak but distinct image remaining on the resulting plate.

THE WISCONSIN CONVENTION.

THE Sixth Annual Convention of the Photographers' Association of Wisconsin was held at Milwaukee, March 11th, 12th, and 13th. President Henry S. Miller, of Fond du Lac, opened the meeting with an address of welcome to over a hundred members in attendance, and the remainder of the session was spent in social intercourse

The practical work of the convention began at the afternoon session with a demonstration of lighting and posing, by Mr. E.

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C. Guttenstein, of Milwaukee. This was enthusiastically followed by all in attendance.

Later in the afternoon a business session was held, and communications were read from the Photographers' Association of New England, suggesting that each of the State associations provide a set of twelve of its best pictures for exhibition at the convention of each of the other associations, thus giving the photographers of each State an opportunity of examining more than two hundred specimens of the best work of other photographers.

Communications were also read from the Executive Committee of the Photographers' Association of America, and from Geo. M. Edmondson, President of the Photographers' Association of America, asking the Wisconsin Association to assist in making a good display of work of American photographers at the National Convention, to be held in Buffalo, N.Y., on Aug. 5th, 6th, 7th, and 8th, 1902, and offering the Wisconsin Association an exhibit of six pictures by each of the officers of the National Association.

On motion of Mr. Klein, the communications were adopted as read.

The question of awarding prizes at our conventions came up for informal discussion, and President Miller expressed a desire to ascertain the sentiments of the members on this subject. It was decided to take up the question for further discussion at a future meeting.

Second Day, March 12th.

From 9 to 10 A. M. a demonstration in posing and lighting heads was given at the studio of Klein & Guttenstein. Mr. Guttenstein was in charge of the demonstration.

From the studio the members adjourned to the Exposition Building, where the morning session was called to order at 10.30

First in order was the report of the Nominating Committee, which was as follows: President, Henry S. Miller, of Fond du Lac; 1st Vice-President, E. C. Guttenstein, Milwaukee; 2d Vice-President, A. E. Taylor, Delavan; Secretary, J. M. Bandtel, Milwaukee; Treasurer, W. A. Pryor, La Crosse.

The President asked for additional nominations, but as no other names were offered, Mr. W. T. Ross moved that the Secretary be instructed to cast a ballot for each of the candidates presented by the Nominating Committee.

The motion was seconded by E. E. Combs, and, when put to a vote, was carried unanimously. The Secretary cast the respective ballots, and the old officers were declared re-elected.

The special committee consisting of Messrs. Klein and Bish reported favorably on the question of sending a collection of pictures by the members of the Wisconsin Association to the Convention of the New England Association.

Mr. Klein said that the New England Association had sent fifty pictures for exhibition at our convention, and that the Wisconsin photographers should reciprocate, and his committee recommended that the Wisconsin photographers send in some of their work, from which about twenty of the best pictures should be selected and sent East.

Mr. Ross moved that a committee be appointed to select pictures from the exhibits by members at the present convention, to represent the Wisconsin Association at the National Convention, and also to select such other pictures by members of the Wisconsin Association as they may be able to secure. Motion carried.

On motion of J. F. Denninger, it was decided to hold the next convention in Milwaukee, and that the dates for said convention shall be fixed by the Executive Committee.

The question of awarding prizes was then again taken up and discussed at some length, some holding that an incentive of some kind was necessary to bring out exhibits, and it was suggested that diplomas and ratings be awarded.

The question was discussed very thoroughly from both sides, Mr. Klein suggesting that the selection of pictures to represent the Wisconsin Association at the National Convention and the prospects of being honored in this way were great incentives. Mr. Fell suggested that the best picture exhibited by a member being selected for the Interstate Exhibit was also an incentive and an honor well worth striving for. Mr. Denninger moved that the Association

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offer no prizes. The motion seemed to be carried, but a rising vote was called for, and on taking such vote the question was decided in the affirmative, and the association will offer no prizes at the next convention.

At this part of the proceedings Mr. W. T. Ross announced that for the first time at a convention of our State Association we were honored by the attendance of a lady who had for many years taken a great interest in photography and had done much for our profession, manifesting a special interest in our association, and that he felt sure that we would be glad to have her as a member, and therefore moved that we elect to honorary membership in our Association Mrs. Fitzgibbon-Clark, of St. Louis, Mo.

Motion seconded by Mr. Denninger. Carried unanimously.

The afternoon session was called to order at 3 o'clock. After the appointment of several committees, Mr. C. Smith, of Evanston Ill., who had acted as judge, then reported as follows: The "Smith Trophy," which had been offered by Harry E. Smith, of Milwaukee, for the six best pictures entered in that class, shall be awarded to exhibit marked No. 151. The Secretary announced that this exhibit was by J. F. Denninger, of Neenah. The picture selected for the Interstate Exhibit was by Rice & Fromm, of Milwaukee.

President Miller then introduced Professor J. H. Vanderpoel, of the Art Institute of Chicago, who lectured on "The Lighting of the Head as Affected by its Construction." This lecture was illustrated by large drawings made before the audience as the speaker proceeded with his topic. The lecture was attended by one hundred and twenty-five very interested members.

In the evening about one hundred and fifty members and their ladies were entertained at a theatre party held at the Academy of Music.

Third Day, March 13th.

The morning session was called to order rather late, owing to the fact that the members were greatly interested in the exhibits of pictures and somewhat slow to adjourn to the meeting-room.

At 11 A. M. Professor Vanderpoel criticised the pictures entered for this purpose and a number of others selected from the General Exhibit.

This part of the programme was, as usual, very instructive, and received close attention.

Mr. Klein for some fifteen or twenty minutes led a very interesting discussion on "Business Methods in Photography," and a number of questions of considerable importance to the profession were taken up and given careful consideration.

Mr. H. M. Fell then took the floor and spoke on the subject of "Some Successful and Some Unsuccessful Photographers that I Have Met."

After a very interesting discussion of his subject, followed by informal talks on various subjects, by others present, the convention adjourned.

J. M. BANDTEL,
Secretary.

The Picture Display.

The pictorial exhibits were placed in position on the walls of the main room of the Art Gallery in the Exposition Building, and the manufacturers and dealers had their displays and headquarters in adjoining rooms.

The following photographers were represented in the "Loan Exhibit:" F. W. Guerin, St. Louis, Mo. (2 pictures); Jas. Matzine, Chicago, Ill. (14); Elias Goldensky, Philadelphia, Pa. (7); C. W. Hearn, Boston, Mass. (7); M. B. Parkinson, Boston, Mass. (2); E. G. Merrill, Salem, Mass. (5); Mr. Lamont, Salem, Mass. (2); Mr. McDonnell, Boston, Mass. (5); Whitney & Son, Cambridge, Mass. (1); H. Kimball, Concord, N. H. (6); Geo. M. Bolton, Rockville, Conn. (6); W. H. Partridge, Boston, Mass. (2); G. H. Van Norman, Springfield, Mass. (1); W. E. Marshall, Arlington, Mass. (1), making a collection of sixty-one pictures, all of excellent quality.

The officers of the Photographers' Association of America—President, Geo. M. Edmondson, Cleveland, Ohio; 1st Vice-President, J. G. Nussbaumer, Buffalo, N. Y.; 2d Vice-President, H. S. Klein, Milwaukee, Wis.; Secretary C. R. Reeves, Anderson, Ind.; Treasurer, F. R. Barrows,

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Boston Mass.—were each represented by six pictures.

In the "Smith Trophy" class were entered six pictures by each of the following Wisconsin members: J. F. Denninger, Neenah; W. T. Ross, Appleton; C. E. Ford, Madison; W. C. Larson, Randolph; Rice & Fromm, Milwaukee; T. R. Bowring, De Pere; H. A. Lyman, Stevens Point.

The Interstate Exhibit was represented by the following associations: Starks, of the Northwestern; Goldensky, of Pennsylvania; Morrison, of Illinois; Thuss, of Kentucky and Tennessee; Dean, of Texas; Reeves, of Indiana; Moore, of Missouri; Lancaster, of Nebraska; —— of Kansas; Denninger, of Wisconsin; Townsend, of Iowa; Van Norman, of New England.

The General Exhibit contained some two hundred pictures by the following Wisconsin members: Klein & Guttenstein, Milwaukee; J. M. Bandtel, Milwaukee; C. E. Ford, Madison; C. A. Buss, Jefferson; E. E. Combs, Evansville; J. E. H. Stimson, Appleton; R. H. Barlow, Janesville; W. A. Pryor, La Crosse; J. H. Field, Berlin; W. C. Larson, Randolph; C. E. Wright, Janesville; Dan Johnson, Oshkosh; E. G. Lapiere, Beloit; Rice & Fromm, Milwaukee; A. S. Ralph, Oshkosh; J. F. Denninger, Neenah. Seventeen manufacturers and dealers had representatives in attendance.

AN IMPORTANT DECISION COVERING THE USE OF MOVING PICTURES.

THE United States Court of Appeals on March 10th rendered a decision in the case of Edison *vs.* The American Mutoscope and Biograph Company, the effects of which will be wide-reaching as regards the status of what is known as the "moving picture art." This decision finally disposes of the long debated question as to who invented "moving pictures," and the unanimous opinion of the Court of Appeals is that Edison did not.

The decision is the end of a long and tedious litigation which has been in progress many years between Mr. Edison and the American Mutoscope and Biograph Company, the former claiming that the Biograph Company was infringing on his rights as the inventor of a new art. The Biograph Company has disputed this claim and has spent what might be called a moderate sized fortune in fighting for what this decision has proved to be—its lawful rights.

Briefly, the history of this litigation is that, after taking testimony for months, the case was heard before the United States Circuit Court, and after many months' delay a decision was rendered entirely in Edison's favor, the four claims in suit being upheld by that court, and the Biograph Company being adjudged infringers. The Biograph Company lost no time in appealing from this decision to the United States Circuit Court of Appeals, the highest tribunal in the land which passes on patent cases of this nature. The case was heard on appeal in October, 1901, and pending the decision of the court the Edison Moving Picture Company had, in a legal sense at least, all the rights on their side.

It has been a source of wonder to all who know the ways of the learned judges who comprised this special Court of Appeals, that their decision was so long delayed, a period of about five months, as these particular judges are noted for their promptness. Both parties to the controversy fancied that they saw advantages to themselves to be inferred from this long delay, which evidently indicated not only the vast and far-reaching importance of the case, but also its intricacy. A decision was handed down Monday as above stated, absolutely reversing the lower court, and awarding the entire case to the American Mutoscope and Biograph Company. What is involved in the decision can possibly be best explained by referring to the Edison claims as set forth in his patent application, as well as by giving a few pertinent extracts from the decision of this court of final resort.

The purpose of the invention is to produce pictures representing objects in motion

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throughout an extended period of time which may be utilized to exhibit the scene, including such moving objects in a perfect and natural manner by means of a suitable exhibiting apparatus. To achieve this purpose Mr. Edison built (to quote his first claim): "An apparatus for effecting by photography a representation suitable for the reproduction of a scene including a moving object or objects, comprising a means for intermittently projecting at such rapid rate as to result in persistence of vision images of successive positions of the object or objects in motion, as observed from a fixed and single point of view, a sensitized tape-like film and a means for so moving the film as to cause the successive images to be received thereon separately and in a single line sequence."

There are two other claims of technical rather than of general interest which we need not quote. The fifth claim, however, is as follows: "An unbroken transparent or translucent tape-like photographic film, having thereon equidistant photographs of successive positions of an object in motion, all taken from the same point of view, such photographs being arranged in a continuous straight line sequence, unlimited in number save by the length of the film, substantially as described."

This, as will be seen at once, is broad enough to cover the entire moving picture art, as it embraces the celluloid film strip itself, no matter with what apparatus this strip might be made. The first claim having covered every practical apparatus, and the fifth claim covering the product, it would appear that should these claims have been upheld the outlook for Mr. Edison's competitors might without exaggeration be called somewhat gloomy. In the lengthy though exceedingly interesting decision rendered by the court, it is set forth that as long ago as 1864, a Frenchman, Du Cos, described a camera apparatus which in all essential features came hazardously near the Edison claim—in fact, Professor Morton, the expert for Mr. Edison, concedes that the "Du Cos camera would be capable of taking a series of photographs on a strip of sensitized paper, such as subsequently came into commercial use, at the rate of eight or ten a second, but the expert insists that the paper then was not sufficiently sensitive to permit this to be done."

The decision goes on to say: "Prior to January, 1888, a sensitive film better adapted for instantaneous impression was in commercial use with photographers, and in that month a patent was obtained in this country by Le Prince for a method of an apparatus for producing animated pictures. The camera apparatus of M. Marey, described in the *Scientific American* of June, 1882, and used by him to produce a series of instantaneous photographs, described a single lens camera and clock mechanism which actuates the several parts." M. Marey made pictures at the rate of twelve per second, the exposure being but 1/720th part of a second each. Mr. Levison in an article published in the *Brooklyn Eagle*, of June 4, 1888, describes a camera apparatus for taking a series of objects in motion, in which a single lens is employed, to operate upon plates 3¼ x 4¼ inches in size. The decision then goes on to compare what Edison was able to do with his camera with what had been done by his predecessors, and the following conclusion is drawn:

"It is obvious that Mr. Edison was not a pioneer in the large sense of the term, or in the more limited sense in which he would have been had he invented the film. He was not the inventor of the film. He was not the first inventor of the apparatus capable of producing single negatives taken from practically a single point of view in single-line sequence upon a film like his, and embodying the same general means for rotating drums and shutters for bringing the sensitized surface across the lens and exposing successive portions of it in rapid succession. Du Cos anticipated him in this, notwithstanding he did not use the film. Neither was he the first inventor of the apparatus capable of producing suitable negatives and embodying means for passing a sensitized surface across a single lens camera at a high rate of speed with an intermittent motion, and for exposing successive portions of the surface during the period of rest. The predecessors of Edison invented apparatus, so no new principle was to be discovered, and essentially no new form of machine invented in order to make the improved photograph material (celluloid

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film) available for that purpose. The early inventors felt the need of such material, but in the absence of its supply had either contented themselves with such measure of practical success as was possible, or had allowed their plans to remain on paper. Undoubtedly Mr. Edison, by using this film (not, however, his invention) and perfecting the first apparatus for using it, met the conditions necessary for commercial success. That, however, did not entitle him under the patent laws to a monopoly of all camera apparatus capable of using the film."

The decision ends by denying Mr. Edison's claim in the following words: "We conclude that the court below erred in sustaining the validity of the claims in controversy, and that the decree shall be reversed with costs, and with instructions to the court below to dismiss the bill."

The Biograph Company have thus won a great victory not only for themselves, but also in the names of the real pioneers and inventors, the benefit of whose work (done forty years ago) now accrues to the public, who nightly applaud the stirring pictures shown by the Biograph throughout the country.

The offices and factories of the American Mutoscope and Biograph Company just now resemble a bee-hive of activity. The company has been preparing new types of moving picture apparatus for the past two years, none of which have they dared to put on the market pending this decision. All things now having been decided in their favor, the public may expect to see a new burst of activity in the vaudeville houses as regards the moving picture art, and it is promised that some startling innovations and improvements will immediately be presented.

Besides the new types of exhibiting apparatus, the company has been quietly preparing an enormous stock of films to sell to exhibitors throughout the country. It would thus appear that this favorable decision is not much of a surprise to the Biograph Company as might be thought, they having discounted the effects of this favorable decision.

LANTERN-SLIDE TIPS.

At a recent lecture before the London Camera Club, Mr. Sanger Shepherd gave an informal demonstration on lantern-slide making.

Cadett's lantern plates were used. Various ordinary density negatives were used for contact printing in an ordinary pressure frame. The exposures was to a 16 c.p. electric lamp at, say, 2½ to 3 feet distance. The exposures ranged from three to five seconds. Metol was the developer used. Formula as follows: Metol, 1 ounce; soda sulphite, 5 ounces; soda carbonate, 2 ounces; water, 80 ounces. First dissolve the metol, then the sulphite, and finally the carbonate. This order yields a solution which keeps colorless and in good order for quite a long time. But if the sulphite be dissolved before the metol the solution presently discolors, and may throw down a precipitate. To get *strong contrasts* from a weak negative expose at a greater distance from the light and prolong development. For extreme cases a few drops of a 10 per cent. solution of potassium bromide may be added to the ounce of above developer.

To get *safe results* from a strong contrast negative, expose nearer to the light, and reduce the time of development.

For black and white (diagram, map, etc.) slides it is sometimes necessary to intensify, and if there is the slightest fog veil this should first be removed by reduction, and then the slide intensified.

For intensification he preferred a plain saturated solution of mercury bichloride—well washing—and blackening by dilute ammonia, say 5 to 10 drops of strongest ammonia per ounce of water. This darkening agent had a slight reducing, *i. e.*, contrast-giving effect, and thus in this particular connection was preferable to darkening with ferrous oxalate. When a slide has been bleached in the mercury bichloride bath, look through it at some very dark object—*i. e.*, piece of black cloth. In this way any slight fog veil over the parts

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that should be clean glass can be easily seen. Local intensification was demonstrated, the bleaching solution being locally applied by means of a small tuft of cotton wool. Ordinary "medicated cotton wool" in 2*d* packets from the chemist being recommended in preference to the wool usually sold by the draper. For local reduction alone equal parts of a cold, saturated solution of pot. ferricyanide and ordinary hypo bath was locally applied in the same way, with frequent rinsings under the tap. And then, when sufficient reduction had taken place, the slides were immersed in the clean fixing bath to prevent any yellow stains ensuing.

Mr. Sanger Shepherd does *not* recommend washing the plate after developing and before fixing, but prefers to transfer from the developer straight into the fixing-bath. The importance of fresh and clean hypo was emphasized where clear and bright slides were required. For dark-room light the demonstration was performed with the S. S. green light, and, in addition to this, being much less harmful to and comfortable to the eyes, it also had the advantage of enabling one to see things easily at a greater distance away from the light than in the case of red light. Mr. Shepherd, who is an acknowledged authority upon color questions, said that some of the commercial lantern plates now on the market were appreciably sensitive to red light, and for that reason, if for no other, a red light should not be used.

P. S.—Before attempting local intensification it is very important that the film should be previously well washed in water for several minutes, so as to insure its being quite uniformly softened, so that the solutions will flow quite evenly.

THE RECOVERY OF PLATINUM RESIDUES.

BY PROFESSOR F. G. MCINNES.

It is often a matter of considerable doubt and difficulty to the platinum worker how best to gather and utilize the residues which accumulate during his operations. It may seem incredible, but it is, nevertheless, quite true, that a careful attention to this most important point will go far toward recouping the initial cost of the materials, and will make this beautiful and perfect printing process compare very favorably with any other as regards working expenses.

The quantity of the precious metal contained in the paper is generally far in excess of that which is utilized in the formation of the actual image, and, therefore, it is a point of great importance to see that none of the solutions which may contain any of the metal is thrown away or wasted. At the present time the price of platinum is approximately two pence per grain, or one penny per grain for the chloroplatinite salt. As will be seen by what follows, the trouble of saving and the methods of recovery are very easy and simple, and will well repay the slight outlay required.

These residues will be usually of three kinds—first, with those who are in the habit of preparing and sensitizing their own paper, there will be the waste sensitizing solution which may from any cause have gone wrong and become unfit for use; second, there is the oxalate developing solution which will contain the greatest quantity of platinum from the paper; third, there will be the first of the acid-fixing baths which will contain considerable traces of the metal. The second and third acid bath will only contain minute traces of iron, and may be used in rotation as the first fixing-bath.

It is the custom with many to mix in one receptacle all these waste solutions and send them to the refiner, but this is a wrong way to do it, as the bulk increases rapidly, and the difficulty and expense attending the recovery of the metal is far greater. Each solution should be reserved in a separate vessel, and when enough is accumulated, each should be separately treated.

We will first deal with the waste sensitizing solution. It is commonly recommended to add a solution of ferrous sulphate and to bring the mixture to a boil-

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ing temperature for some minutes. This method, no doubt, effectually reduces the platinum to the metallic state, but it will be found to be in such a minute state of division that its separation from the supernatant liquor without considerable loss becomes a matter of extreme difficulty. If it is allowed to settle—a process occupying several days—the disturbance caused by decantation will cause the precipitate to rise and float away in spite of all precautions.

A better method than this is to add to the solution some sodium formate, when a brisk effervescence will take place, and a mixture of platinum and iron will be thrown down as a black powder, which readily deposits itself on the sides and bottom of the vessel, and may be washed with facility by decantation. The iron and other impurities are afterward removed by digestion in dilute hydrochloric acid.

But far the simplest and easiest method is to precipitate the platinite salt as an insoluble platinate. To do this, when the residues have accumulated in sufficient quantity to make it desirable to recover the platinum, add to the solution an excess of ammonium chloride, and also of potassium chlorate. Supposing, for example, that one has forty ounces of platinum sensitizing solution, which may contain anything from 200 to 600 grains of platinite salt, add either previously dissolved or in crystal an ounce of ammonium chloride and from forty to sixty grains of potassium chlorate. Shake or stir it until all is dissolved, and then place it aside. In the course of a few days the whole of the platinum will be deposited as a bright golden-yellow crystalline deposit of ammonium chloroplatinate, insoluble in the solution and in water.

The reaction is slow, but if time is of importance it may be hastened by heat. This, however, gives it in such fine division that waste may occur in the washing operations, so that it is better to allow the action to take place spontaneously, and the resulting precipitate may be collected by decantation and washed with dilute alcohol to free it from all iron salt or other impurity.

The second residue solution or the developer may be treated in the same way, and the chloroplatinate added to the other for further treatment.

This method will not be suited to the acid fixing-bath, because, being a dilute solution of hydrochloric acid the chloroplatinate formed, or an appreciable quantity of it, would remain in solution. A more convenient method of treatment, therefore, is to store it in large wide-mouthed bottles, such as are known as double Winchesters, and when full add a few pieces of granulated zinc, or better still a few zinc filings. Zinc readily precipitates metallic platinum from all its solutions. After the addition of the zinc the liquid may be decanted after allowing the sediment to subside, and the bottle is ready for more acid bath. Or, if preferred, a strip of zinc may be kept in the bottle and the supernatant liquid decanted as convenient. In this case the platinum will partly precipitate and partly adhere to the zinc as a black powder. When desired the zinc may be completely dissolved by the addition of acid, when the platinum black can be collected and washed by decantation.

It only remains now to describe briefly the after treatment of the ammonium chloroplatinate as recovered from the residue. The formation of this salt is frequently used as a means of obtaining perfectly pure platinum from solutions containing other metallic salts. All that is necessary to be done is to gather the salt in a Berlin ware dish, and after well washing with small portions of dilute alcohol—methylated will do, as the object is to prevent the slight solvent action of water alone—carefully dry the salt in the sand-bath, and then raise the temperature until it is somewhat above that of boiling water. Copious white fumes of ammonium chloride will be given off, and when these cease the pure metallic platinum will be left as a black powder, which, indeed, is sold commercially as platinum black. The only probable impurity present—and this is scarcely probable—may be from the presence in the yellow precipitate of a small portion of potassium-chloroplatinate. In this case the potassium salt would not be driven off by the heat, not being volatile like the ammonia salt. Allow the platinum to cool in the dish, and add a little water with a

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few drops of hydrochloric acid, boil for a few minutes, and carefully drain away as much as possible and dry. By taking the exact weight of the clean and dry dish previously, the exact amount of metal may be ascertained. It is now ready for dissolving in the mixed nitric and hydrochloric acids, as has already been described in these pages. In this case solution takes place easily and rapidly.—*Photography*.

ITEMS OF PROGRESS.

The Sultan of Morocco recently had two hand-cameras made in London at a cost of $15,000.

A Safe Ruby Light screen for the dark-room can be made by coating one side of a sheet of glass with eosine dissolved in ordinary negative varnish, and on the other with aurantia in similar varnish. This is quite equal to the inconvenient fluid screens.

For Photographing Glass Vessels the following method is recommended: In order to reduce the vigor of the impression of the back surface, the front side of the glass should be rubbed with powdered talc and lightly dusted with a soft cloth, so as to leave the talc only on the engraved portion. The vessel should then be filled with a very dilute solution of permanganate of potash. After such treatment a photograph showing a clear impression of the etching or engraving may readily be obtained.

Repairing Cracked or Broken Negatives. Take an old negative, or, preferably, an undeveloped fixed plate, and soak it slightly in water so that the gelatine is only partly swelled. The cracked or broken negative should be placed upon this, with its back to the gelatine, and gently but firmly pressed down; by the swelling of the gelatine the air is excluded and the two plates become firmly attached to each other. If an old negative has been used for a support, the broken negative must be coated with enamel collodion and stripped in the usual way; but in the case of a cracked negative, mounted upon an unexposed fixed plate, stripping is not necessary.

Line Engraving Effects. A German photographer has patented a process by which the effect of a steel engraving is given to a photograph. This is done by using a ruled film between the negative and the printing paper, and it is sufficiently thin to obviate any perceptible loss of sharpness in the photograph.

When washing a single plate after development or fixing it is a quick and effective way to place it on a piece of wood, cut rather smaller than the plate and about half an inch thick; let the wood and plate float in a tray, with the water spray playing down upon it. The plate floats just above the water and the washing is much accelerated. The wood may be varnished or enamelled.

In dull weather a radiometer in the studio will be found to give a useful hint as to the actinic value of the light by noting the rapidity or sluggishness with which the fan revolves.

EDITOR'S TABLE.

ALUMINUM Film Sheaths, for the use of cut films in ordinary plate holders, are a new convenience just introduced by JOHN CARBUTT, Wayne Junction, Philadelphia. We have used these sheaths with success, and can recommend them as altogether desirable for their purpose. With these helps now available cut films should win new popularity.

THE Guerin College of Photography, conducted by the veteran, FITZ GUERIN, of St. Louis, seems to have secured a large measure of public favor. From reports received the number of students is continually growing, and many professionals are journeying to St. Louis to avail themselves of the practical teaching offered by this master in photography.

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THE new catalogue of "Ross Lenses and Photographic Apparatus, 1902," is ready and can be obtained on request from ROSS, LTD., 111 New Bond St., London, W. Lens-buyers should not overlook the fine instruments offered by ROSS, LTD., when making their choice of a new lens.

MR. FRANK BENSON, recently connected with the New York office of the BAUSCH & LOMB OPTICAL CO., is now associated with the house of C. P. GOERZ, at 52 Union Square, this city, from whom we have received a charming little booklet about the Goerz Double Anastigmat, entitled *A Golden Opportunity*.

THE new "Volute" shutter, introduced by the BAUSCH & LOMB OPTICAL CO., Rochester, N. Y., is winning great favor among photographers, because of the very efficient way in which it meets everyday requirements. The Volute is said to be the smallest and most compact of all diaphragm shutters, is very simple in construction, and easy in operation. A new catalogue describing the BAUSCH & LOMB shutters can be had on request.

AMONG the activities of the past month at the Guerin College of Photography, St. Louis, we note the following:

Mr. GUSTAV CRAMER gave an interesting talk on the "Cramer Plate," and the students enjoyed his demonstration very much. HARRY FELL, of the AMERICAN ARISTOTYPE CO., gave a practical talk on the papers manufactured by his company. Mr. BIGELOW demonstrated the many good points of his flashlight machine. Mr. HUNT, in charge of the Lens Department of H. A. HYATT, gave a talk on lenses and their uses in professional work. The students enjoyed a morning in inspecting the SEED DRY PLATE factory. During the last month about twelve of the students have gone to positions or entered business for themselves.

TRIMMING prints, trimming or cutting card mounts, and also bevelling the latter at will, is a good deal to expect from one instrument, and a cheap one at that, but, nevertheless, that is what is done by the bevelling apparatus which Messrs. BURKE & JAMES, of Chicago, have perfected and are now distributing, as noted in their announcement. The value of this exceptionally neat and effective apparatus can hardly be overestimated, and we recommend our readers to see it.

Messrs. BURKE & JAMES also send us sample tubes of their new developing agent, *Microgen*, the invention of their chemist, Mr. RALPH MARTIN. In practical trials we have found Microgen a valuable developer, giving abundant detail with soft density in a reasonable time of development, the resulting negatives being good printers. Microgen is advised for plates, films, lantern slides, X-ray work, bromide prints, and development papers, which would seem to make it a universal developer. Formulæ are neatly attached to the sample tube, so that they can be detached and preserved, a convenience which practical workers will appreciate. We hope to give Microgen a more extended trial later, our present experiments being confined to plates. The sample tubes can be had for 15 cents (in stamps) from the manufacturers.

THE April *Chemical List*, issued for free distribution by CHARLES COOPER & CO., 194 Worth St., New York, is ready. This is the most complete chemical list reaching our table, and should be in the hands of every photographer.

THE ROTOGRAPH CO., 101 Fifth Ave., New York, has again been obliged to enlarge its premises to make room for its rapidly growing business. Additional stock-rooms have been secured for the new specialties now being introduced, and the offices offer abundant signs of prosperity and activity.

It is announced that the company will change the name of their *Bromide Monthly*, so that it will be known hereafter as *The Photo Critic*. The editors promise to make things lively in their magazine, and we trust their inspirations will not fail them, as the photographic trade needs some sort of an awakening.

MESSRS. TENNANT & WARD, 287 Fourth Ave., New York, report a steadily increasing demand for their well-known photographic text-books: *Quarter Century in Photography*, *Cyclopædic Photography*, *Photographics*, and WILKINSON'S *Photo-Engraving*, *Photo-Etching*, etc. The value of these standard hand-books is well attested by the way they sell, in spite of the innumerable books on photography produced here and in Europe.

THE camera catalogues are this year more attractive than ever before. We may safely say, however, that the new Kodak list just issued by the EASTMAN KODAK CO., Rochester, N. Y., leads them all, and can hardly be surpassed by any yet to come. The cover of this catalogue is remarkably clever in design and execution, and the contents amply sustain the expectations awakened by the exterior.

We must leave our readers to investigate its good things for themselves, merely mentioning the Folding Pocket Kodak de luxe, a new stereo kodak, retailing at the wonderfully low price of $15; the No. O Folding Pocket Kodak, and a plate attachment for the No. 3 F. P. K., enabling one to use plates or rollable films at will. Those who are thinking of a new view camera for the season now opening should get a copy of this charming catalogue from their nearest dealer.

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PORTRAIT

By D. D. Spellman, Detroit

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WILSON'S PHOTOGRAPHIC MAGAZINE.

EDITED BY EDWARD L. WILSON.

VOL. XXXIX. MAY, 1902. No. 545.

A SIMPLE BOOKLET.

BY PAUL CLARE.

THERE is need just now, in a hundred studios, of a reliable little booklet or leaflet giving hints for the guidance of sitters. In the big towns this is not so very necessary, perhaps, nor in the very "way-back" districts, but in many a small city such a means of instruction would not only prove an advertisement for the studio, but would be appreciated by prospective customers.

A leaflet of this kind is a thing likely to be read—and discussed. It must not emphasize too many *don'ts*. Some booklets and newspaper articles which I have seen make a specialty of this department. "Don't interfere with the artist. Don't, if you are fleshy, come in a tight-sleeved dress. Don't overdress." As if any overdressed woman was ever aware of the fact. No! instead of issuing cautions and don'ts, point the right direction. Suggest the do's; those steps which will help the picture. It is much better to persuade people that they must come in dainty, soft woollens than that they must *not* come in stiff alpacas or silks. Instead of cautioning people that they must come to the gallery when calm and self-possessed, infuse such a restful feeling into the place itself that entering it makes a person feel rested and at home. A booklet conceived in this spirit would do more good than a book crammed with rules for observance. Every photographer knows the importance of hair in a feminine photograph; but to advise on the matter! "If you have a plump, round face dress your hair high; if you have a long, thin face, dress your hair long and broad." So go the instructions, but, believe me, the ladies want no lessons from us either in the arranging of their hair or the choosing of their dresses. The advice should be, "Come as you are," and when they come their reception should convince them that they have done right.

There is one branch of portraiture, however, which is an exception—the portraiture of children. Children are not free agents in the matter of sittings; they attend at the wills of their elders. And while it is best to let the "grown-ups" come to the studio with minds unfettered with cautions, it may be necessary to give a few words of advice or caution regarding the preparation of the children. But even here it should merely be a caution that the child's head be not too much filled with anticipations—especially with slightly doubtful ones; and that morning is the best time, just because you want his or her highness to be feeling at the best—for a tired, afternoon feeling surely reflects itself in the work.

But if a booklet is not to contain any cautions, what is there left to go in it? Well, there are the "do's." As I have said, these might, perhaps, be condensed into "come as you are," or "come now;" but they may be expanded to suggest the best materials or styles; but when you say "Come in soft muslin," do not add, "*Don't* come in stiff silk." Get rid, quietly, of one or two of the old ideas which lurk in the minds of so many people. What time of day is the best? Now there are people

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alive—thousands of them—who have not been photographed for years, and the last time they faced the camera they had a head-rest behind them, and they gazed into the lens for twenty long, unwinking, non-breathing seconds. In reality, it was not a terrible ordeal; but to them, primed with warnings before ever they reached the studio, it seemed so, and so it has seemed ever since. So tell people that bright sunlight is no longer an essential, but that they will be equally welcome in cloudy or in hazy weather. And let them know that there is no longer a long exposure, but that the portrait may be taken in a second or less. If you can, let them think that there is no "function" at all about it. Do not tell them to come preferably in grays, or to leave their red waists at home. Rather mention that they may wear any colors which seem best, and that correct representation may be assured. Do not go into learned disquisitions about new processes or isochromatic plates, but have the plates ready to hand when they are wanted.

Just as we have been told that the best posing is got by not posing at all, so the best appearance before the camera is usually got by refraining from cautions before the event. Make the people think that the whole process is simplicity, and that success is a matter of course, and half the victory is won.

How should a booklet be got up? Talk it over with the printer; he will know how to advise.

A column or half-column article, dealing chattily with photography, and by a local man, is often acceptable to the editor of a Sunday or a weekly edition. If your local paper is a job-press office (it's sure to be) ask the editor or manager about printing a column and then reprinting it in booklet form.

The very cheapest kind can be got by using the same types and setting, simply dividing the galley into three or four, and printing it as a four-page folder. Such an effort hits twice, first, in the paper, where it will be read by many who are not your customers, and again when the booklets are sent out.

We are glad to publish this timely article. The photographer should during this month (if he has not already seen to it) get out such a booklet for the attraction of summer visitors in his locality, or for the stay-at-homes. It is a well-known fact that our women and children appear to the best advantage during the summer months, the open-air exercises and summer toilettes contributing to their attractiveness. The point should not be overlooked. For those who do not feel able to prepare the booklet for themselves, we would suggest the services of an expert in such matters.

AN APPRECIATION OF ROCHER'S PORTRAITS.

BY MENZIES CUMMING.

THE publication of a few examples of portraiture by the late Henry Rocher, of Chicago, in our March number has brought us several letters of appreciation from the craft. In the last issue of that lively and useful journal *The South-West Photo* Mr. Menzies Cumming says: "'WILSON'S PHOTOGRAPHIC MAGAZINE' for March by its splendid half-tones sends the 'old-timer way back' to days of the wet-plate, when art and artists were considerably scarcer in the fields of photography than they are today. This number of the 'Pioneer of the Procession' should be in the hands of every modern operator throughout the length and breadth of the land, as affording ample evidence that 'there were artists in those days' who had no need to blush for the creations of their heads and hands, and whose examples of artistic skill can give the 'johnnie-jump-ups' of more modern days a few lessons from which to profit.

"Editor Wilson has done the profession a most valuable service in publishing a series of seventeen half-tones from photographs by Henry Rocher, Chicago, 'illustrating American portraiture twenty-five years ago.' Each one of the seventeen is a study, not only in pose and light, but, whether the subject be sitting or standing the charming flow of the lines of each figure speak in no unmeasured terms of

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vital action, so often lacking in portraiture from the hands of our very best artists.

The most careless cannot help being struck with this all-pervading *life*, and the entire absence of the idea of 'sitting for a picture,' thus making each picture a replica of nature, and not a caricature. The frontispiece, 'A Portrait Group,' is so intensely natural that in imagination we can hear the conversation between the ladies, while every line so finds its balance that you feel you are not looking upon a reproduction of nature, but on nature itself. This is true art."

[In our next issue we will publish several papers on the Rocher portraits and announce the winner of the $10 prize offered for the best letter on the subject.—ED. W. P. M.]

THE ACTION OF ALKALIES IN DEVELOPERS.*

BY DR. CHAS. L. MITCHELL.

IN making a developer we start with two agents, the developer or reducing agent and the accelerator or alkali—the one represented by pyro and the second by the three alkalies, ammonia, soda, and potassia. In preparing the developer another substance is also used, which, on account of its character, deserves to be considered—that is, sodium sulphite. Unfortunately, the sodium sulphite which is found in commerce, and which is bought usually by the amateur photographer at the photographic supply-houses, contains impurities. One of these impurities is sodium carbonate. This is the result of its imperfect manufacture. We have also another impurity, and that is when the sodium sulphite is exposed to the air for any length of time a portion of it becomes converted into sodium sulphate. Sodium sulphate is not a developer; on the contrary, it acts as a restrainer. The sodium sulphate, as you see it as a photographic chemical, varies very much in appearance. Sometimes it is in the form of translucent crystals. Sometimes they are covered over with a white powder, or you find that instead of clear, regular crystals they are irregular and opaque. Then you can discard it because it is impure. Then, again, sodium sulphite in as pure a form as we see it is apt to absorb moisture, and you will find in summer time in our climate here, where we have a moist and a hot spell coming together, the salt will liquefy and form a solid mass.

Ammonia is very seldom used in this country in the developer. In England it is used very largely. The usual English formula consists of pyro dissolved in water; the alkali consists of aqua ammonia in more or less proportion. This has a strong tendency to fog, and a very large amount of bromide is necessary.

The question of the proper alkali is a very important feature in regard to the various developing agents usually employed. They are all alkalies, it is true, but they are just as different in their action with these different developing agents as if they were different individuals.

A very celebrated divine who was teaching in a theological school was very much annoyed by a student who tried to puzzle him with irrelevant questions. One day the student said: "Doctor, what is the difference between 'also' and 'likewise?'" The doctor answered: "I will tell you. Muhlenberg was a theologian. You are a theologian also, but not likewise." Ammonia, soda, and potassa are all alkalies also, but not likewise.

In examining the actions of the different alkalies with the developing agents we find a very marked difference. Take pyro, for example. It works also almost equally well with both sodium and potassium carbonate, probably a little more energetically with the potassium salt. The use of a caustic alkali, however, with pyro, is entirely out of the question, as it produces immediate fog. On the other hand, hydrokinon works better by far with the caustic alkali than it does with the carbonate salts; and, furthermore, there is a very marked difference in the action between potassium carbonate and

* A paper read before the Photographic Society of Philadelphia.

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sodium carbonate. If equivalent quantities of sodium and potassium carbonate are taken, and noticing their action when using equal quantities of hydrokinon with each, it will be found that the development begins much more speedily with the potassium salt than with the sodium salt; and, in fact, the sodium salt is so slow as to be a comparatively useless agent. This property is taken advantage of in several well-known preparations on the market. If you will examine the hydrokinon developing powders put up by the Eastman Kodak Company, you will find the contents of the two packages consist of pure hydrokinon in one and crystallized sodium sulphate and potassium carbonate in the other. This is the reason why it is necessary to wrap them in wax-paper and tin-foil, as the potassium carbonate absorbs moisture from the air and very rapidly deliquesces. Taking a developing agent which represents the other and extreme end of the scale from pyro—that is, amidol, we find that such a small quantity of alkali is required to put it into effective operation that the slow alkaline nature of ordinary crystallized sodium sulphite furnishes sufficient power, and no other alkali is necessary.

There is another question which might be of interest to you, and that is, when you are using alkalies in developing you may wish to know how many grains of the different alkaline salts are equivalent to one another. That is, if you are using a certain number of grains of sodium carbonate in your developer, it might be of interest to you to know how many grains of potassium carbonate you should use in order to produce the same effect. There is a little table which is quite valuable in regard to this, which has been compiled by O. G. Mason, M.D., which has been given repeatedly in the *American Annual of Photography*. I append it here. Equal work is done by

112	parts of	potassium hydrate.	
80	" "	sodium hydrate.	
165	" "	potassium carbonate.	
106	" "	sodium carbonate (dry)	
286	" " " "		(crystallized).
168 gr.	"	sodium bicarbonate.	
268 "	"	potassium bicarbonate.	

As an addendum to that table, I would add the following, taken from *Das Atelier*, 1901: 180, by von Hubl.

Von Hubl calculates as follows the amounts of caustic soda necessary to produce phenolates with all the ordinary developers: This amount of alkali gives the best result in a developing solution. The figures in the first column give the amount of caustic soda to be used for every 10 gr. of developer, and the figures in the second column the amount of developer to be used in each 100 c.c. of solution. [If other alkalies are used, these figures in the first column must be multiplied by the following factors to obtain the amount to be used: Caustic potash, ¼; potassium carbonate, 10; sodium carbonate, dry, 8; crystals, 16.—Ed.] Caustic alkalies must not be used with pyro or metol.

Pyrogallol	9.5 gr.	0.3–0.6 gr.
Pyrocatechin	7.2 gr.	0.6 gr.
Hydrokinon	7.2 gr.	0.5–1.0 gr.
Diphenal	5.0 gr.	
Glycin	4.3 gr.	1.0 gr.
Adurol	4.2 gr.	1.0 gr.
Paramidophenol	2.8 gr.	0.4–0.7 gr.
Metol	2.3 gr.	0.6 gr.
Eikonogen	1.5 gr.	0.8–1.5 gr.
Diogen	1.2 gr.	1 2 gr.
Amidol		0.4–0.8 gr.

In reference to sodium carbonate, Dr. Miller [see article on "Sodium Carbonate" elsewhere.—Ed. W. P. M.] has dwelt on a point that I think too much attention cannot be directed to. The average amateur photographer is not familiar with chemistry, and when he buys sodium carbonate he does not know the technical and trade distinctions of the different forms, and, if he is not careful to specify exactly the kind he wants he is likely to have trouble.

It is safe to bear in mind that if you want *dry* carbonate of sodium it should be free from all water of crystallization. If, on the other hand, you wish the sodium carbonate *in crystals* you want clean, dry, hard crystals, that are clear. You don't want a powder with little white masses. Your crystals must be clean and hard and clear. They must not be wet or damp. If you take anything between those two you will not know where you are, and you will have an alkaline solution which there is no way of standardizing. It is safe for ordinary purposes to use either one or the other, provided you select either one of these as a standard and base all your calculations on it.

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ACETONE-SULPHITE, A NEW PRESERVATIVE FOR DEVELOPERS.

BY J. MC INTOSH.

In modern photographic practice the use of sodium sulphite or of potassium metabisulphite may be said to be universal, and in consequence the deeply stained yellow negatives once so common have to all intents and purposes been finally banished.

Neither of the two salts just mentioned is altogether without its drawbacks. Sodium sulphite is subject to atmospheric influences both in the solid and in solution. It is only moderately soluble, and if 10 per cent. solutions of a developer are required the whole quantity of the sodium sulphite quoted in most formulæ cannot be dissolved in the water given. Concentrated solutions are in consequence to some extent out of the question, unless half or more of the sulphite is added to the alkali solution.

With potassium metabisulphite the case is somewhat different. A smaller proportion of it (usually grain for grain of the developing agent) is required, and a 10 per cent. solution is easily made. Although more stable than the sodium sulphite in the solid state, and an excellent preservative of the developer, it decomposes in solution, and the strong smell of sulphurous acid evolved is evidence that a constant change takes place with its concomitant uncertainties as to the amount of alkali necessary at any time when a stock solution that has been made up for some time is employed.

A salt which is itself stable both in crystals and in solution, which preserves the developer from deterioration, and effectually prevents the gelatine from staining, and which, to crown all, can be dissolved to make 50 per cent. solutions, is one that will receive more than a temporary welcome from photographers. Such a salt I have been using lately in acetone sulphite. This has recently been introduced in Germany, and is now, I believe, being placed on the English market.

It is said to keep indefinitely both in crystals and in the 50 per cent. solution, and is to be supplied in both forms. During the time it has been in my hands it has certainly shown no signs of deterioration, and developers made up with it are as clear now as when compounded some weeks ago, although the bottles have been repeatedly opened.

It may be used in all formulæ where either sodium sulphite or potassium metabisulphite is recommended, five parts of the crystals may be substituted as an equivalent for three and a half parts of potassium metabisulphite, and the same quantity may be substituted for forty parts of sodium sulphite. When the concentrated solution is worked from, each two minims may be taken to contain one grain of the salt. Although this statement is not absolutely correct, it may be taken as near enough for practical purposes.

The Continental experts have already worked out a number of formulæ in which acetone sulphite is given in quantities ranging from ½ to 5 per cent. In my hands 2½ per cent. has proved ample even for pyro, which assumes a pale purple tint when stored for some time in 10 per cent. solution, but does not stain the gelatine in negatives, nor even discolor bromide paper. For the modern developers, including edinol—which I have referred to in a recent article—1 per cent. appears to do all that is required.

When used in the development of bromide papers in conjunction with the modern developers it gives good grays and blacks, and in use with pyro-soda or pyro-potash developers gives brown tones.

The extreme solubility of the salt will be appreciated when highly concentrated solutions are required for touring or similar purposes. A 10 per cent. or even stronger solution each of developer and potassium carbonate may be made up, and can be packed in a small compass. The color of the image is a pure black, giving good contrast, and printing quickly. Being an acetone compound the use of any alkali with it secures all the advantages of

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an acetone developer, or the addition of acetone and sodium sulphite, will form a working developer without the necessity of employing free alkali.

In all respects the new salt seems to be a very valuable addition to the *materia photographica*, and promises to be a formidable rival to older preservatives.

[The above, reprinted from *Photography*, will be welcomed by those who already favor the use of acetone in development as a substitute for the alkalis ordinarily used. We note that Jex Bardwell gives an excellent formula for an acetone-pyro developer in *The Photo-Miniature*, No. 34, on "Development with Pyro."—Ed. W. P. M.]

A SALON—"FOR REVENUE ONLY."

[A good example of the public opening "or show day," often advocated in these pages as a desirable method of local advertising for photographers, is given in the subjoined extract from the Bangor (Me.) *Commercial*. The report occupied about three-quarters of a news column in a good position, and must have been a profitable announcement. Space compels us to omit certain portions of the account.—Ed. W. P. M.]

The opening to the public for two days of the beautiful collection of pictures and photographs made by this progressive photographer is a notable event to all lovers of art. The larger cities in holding such salons are patterning after the National Salon held yearly, where the prize pictures from the various State photographers' conventions are given places of honor.

Miss Ramsdell, whose work has commanded the attention of all students of advanced photography, has fortunately secured for her assistant, Mr. Allen Morgan, of Boston, who has made a special study of genre work, and to whose initiative this first salon opening in Bangor is largely due. Four rooms, beautifully decorated by Beers, await the inspection of all visitors, and in the music-room Wilbur Cochrane will preside at the piano.

Through the reception-room and music-room one passes into the water-color room to the salon proper.

Lingering in the reception-room, where a pleasant "greeting" awaits all who enter, we find a number of carbon portraits from which familiar faces invite inspiring conversation.

In a corner of the music-room are a few choice paintings in oil by Mr. Morgan.

In the water-color room are copies of imported masterpieces, some of the originals of which cost $20,000, and the copies of which were very costly. Entering the salon proper, an unequalled display of choicest effects is tastefully grouped.

The feature of the room is the genre pictures representing studies of ideal themes after old masters.

On the opposite wall is a group of seven portraits, carbon pictures, in black and white effects, of well-known people, society ladies, a prominent clergyman, and a college president.

The striking portrait of Hon. William Jennings Bryan might be passed by as only an ordinary picture to the casual observer, yet it is one of a rare class of portraits made like pen etching upon etching paper and carefully worked up by hand. The etching as well as the making of the negative reflects great credit on Mr. Morgan, to whom Mr. Bryan gave a sitting while in Detroit, Mich.

The friends of Adj. Gen. Farnham will be delighted to greet him, though absent, yet so like is his portrait that one almost feels as if he had been clasping the general's warm hand.

If your own especial friends are not in evidence among this unique collection, you may expect to see them at another exhibition, for this is only the first of other salons which will be thrown open to visitors in months to come.

Miss Ramsdell will be congratulated by her many friends, and the public will be assured that the best that modern ideas can afford may always be found at her studio. This applies not only to the work of the establishment, but also to its equipment and appearance.

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WASH DRAWING EFFECTS.

THE peculiarly effective style of finishing portraits which Mr. J. C. Strauss introduced in his *Lytrit* portrait was sure to find imitators. It was equally certain that few of the many imitators would equal the skill and carefully restrained handling seen in the original Lytrit prints. The imitations are now fairly numerous, some pen-finished, others worked up in pencil or crayon, and others simulating wash drawings. We have nothing to say against these methods of finishing portraits. So long as photographic portraiture is worked as a commercial venture whatever will bring business (in a legitimate way) is commendable. But we would point out that, for finishing in pencil, pen or wash drawing effects, a platinotype print of very special character is an absolute necessity; and the negative should also possess certain peculiarities. What these qualities are can best be determined by a careful study of the characteristics of good pen or pencil drawings or sketches in wash.

We reprint herewith a newspaper paragraph anent what is written above. It is difficult to see what possible advantage the "wash drawing" photograph spoken of can have over a good platinotype portrait in which background, figure, pose and lighting have been properly cared for in making the negative, and special care given to printing. The absurdities of the press clipping about the *discovery* or the *originality* of the method, as well as the notion that copyrighting the print could protect the method of production must, of course, be ascribed to the imaginative faculties of the reporter:

"A Worcester artist photographer has discovered a new process which combines photography with wash drawing and makes it possible to idealize a subject without limit. A copyright on the first picture in which the process was employed will be secured, and then the work will be placed on exhibition. The subject of the first picture represents a young Worcester girl seated on the balustrade of a stone stairway in the rear of a castle, idly and dreamily dallying with pole and line in the stream below. She is dressed in a costume of a century ago, with hat of upturned brim, showing the hair in front, flowing gown, slippers and open-work gloves, while the arms are bare. It is a very striking picture, and those who have seen it pronounce the discovery as well as the artistic work a wonderful success. The combination of photography and brush appears to be perfect. The photograph was taken on a white sheet 20 x 24 inches, and then the surroundings were worked up with a brush so skilfully combining the exactness and truth of photography with the ornamentation and embellishment in the wash drawing that artists who saw it could not distinguish the dividing lines. The tones are carried in with the print in pure black and white, with delicate gray intermingled artistically, and the blend is so near perfection that it is incapable of detection. The platinum process is used in the picture. There has been sketching around photographs in order to embellish them for a number of years, although it has never been a decided success, but this is the first instance of photograph wash drawing where the blend is perfect. It is original and the subject of many years of thought and experiment."—*Boston Evening Transcript.*

EXPOSURE.*

BY ALFRED WATKINS.

THE beginner soon discovers that his success largely depends on the time the sensitive plate is exposed in the camera, or, in other words, how long the lens is uncovered. It is only a few years ago that the wiseacres in the art invariably told the young hand that the only way to acquire this

* A paper read before the Manchester Amateur Photographic Society, and reprinted from the Photographic Record.

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knowledge was by experience—that is, by first making many failures. But of late years the problem has received more attention, and almost complete accuracy can now be attained by following certain first principles. In exposing a plate, it is shut up in a camera, and illuminated through an opening in the lens by light reflected from the object or objects being photographed. We have here four influences which are subject to variation, and a variation in any one affects the length of exposure required. They are: Plate, opening of lens, subject, light; and in any plan of estimating exposure these must be considered. The reason why such a thing as correct exposure is necessary lies in the limitations of the sensitive plate, and it is well to examine in a plain, non-technical way what these limitations are. If a plate is exposed in different parts to increasing amounts of light and then developed, we get, of course, varying densities, as shown on the screen. Now, with every particular plate there is a *minimum* amount of light, below which amount no impression is made on the plate at all, this minimum being marked by a cross on the slide. At the other end of the scale there is always a *maximum* amount of light, beyond which amount any increased exposure does not give a corresponding increase of density on the plate. Now, the object of exposing a plate is that all the varying amounts of light in the subject shall be represented by varying densities in the negative, and for a plate to be correctly exposed the highest light must not make a greater impression on the plate than that marked by a cross on the screen; for if the exposure be above this, both high lights and some of the lighter tones will be represented by equal densities in the negative, and the familiar gray appearance of overexposure will result. On the other hand, the exposure must be sufficiently long for the darker details of the subject to make some impression on the plate, or the familiar "clear glass in shadow" of underexposure will result. The real quality of the plate depends upon the distance between these crosses. If the distance is great, we have a plate with plenty of backbone or latitude, and a considerable variation can be made in the camera exposure without the high lights or shadow detail getting respectively either above or below the crosses. In a poor quality plate—and it should be noted that the quality has nothing to do with the speed—the crosses are nearer together, and very little variation can be made in the camera exposure without getting over or under exposure.

Now, the sole object of correct exposure is to get the varying amounts of light reflected from the subject represented on the plate by densities between the crosses, and various plans have been devised for estimating the value of the four varying influences of plate diaphragm, subject, and light, and from these estimates deducing the exposure to give. The ever-varying light was the influence which first attracted attention, and Vogel, about 1873, drew up a table of rough estimates of the value of light at different hours of the day and at different seasons. The slide gives a condensed idea of this table, which was followed in principle by Scott, Hurter, Driffiel, and others. It suffers from the grave disadvantage that any variation from the average light caused by dull weather, clouds, or clear atmosphere has to be allowed for by personal judgment. In 1887 Burton published a rough estimate of exposures for different subjects in bright and dull lights. Burton expressly stated that this table was a rough guide only, and as an accurate classification of subject it is open to the objection that it really includes the lighting also. Thus a stone font in the interior of a church would be classified as 100 to 800, whereas if the same font were in the churchyard it could only be classified as "landscape and foreground" as 2. The Vogel (or Scott) light tables were soon combined with Burton's light tables, and with the necessary table of variation for different sizes of diaphragms, and on these combined tables all the existing exposure tables are based, as well as all those slide calculators in which no light test is made. Now, in all these calculators and tables the variation of the light from the average and also the lighting of the subject have to be estimated, and the human eye is notoriously ill adapted for estimating the actinic value of the light. For a good many years actinometers have been used by a few advanced photographers. In these

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instruments the relative value of the light is given by the time a strip of sensitive paper takes to darken to a standard tint, and other things being equal, the exposure will always be in proportion to this actinometer time. Since Abney adopted bromide paper instead of chloride paper for actinometers, their readings have been found to be reliable, even when comparing the dim light of an interior with the bright sunshine outside, and the efficiency is still greater since the steadfast paper (which never assumes a red tint in damp weather) was introduced. Although before the year 1890—the year I invented my exposure meter—several attempts had been made to utilize the reading of an actinometer with the aid of slide rules to estimate the exposure, the mistake had been made, as in Ackland's card calculator, of using Burton's subject classification; and, although the out-door light was tested by actinometer, any variation for woods, interiors, etc., became a matter of estimation. In my system, introduced for the first time in 1890, and now followed by thousands using my exposure meter and one other instrument imitating mine, I test with the actinometer the light actually falling on the subject, and this being done, the lighting need not be considered in classifying the subject. My system, therefore, is essentially different from the older plan, and does not use the same tables.

Of the *four* factors named on the screen, the first three—light, plate, and diaphragm—need only to be considered in most cases. It is only when the reflecting capacity of the subject varies largely from the average that subject need be considered. As regards the classification of speed of plate, this is not the time to enter into the vexed question of plate speeds. Suffice it to say that plates even of one brand vary in speed from time to time; that the Hurter and Driffield system of speed-testing is practically the only precise plan in use, and that, although several makers mark all their boxes with H. and D. speed numbers, the different makers' numbers have different values, owing to want of uniformity in standard light and developer. For some years I have repeatedly tested all the plates on the market, and publish a speed card, giving the relative speeds for my meter. This is kept in type, and new editions printed frequently. As regards the influence of diaphragm, the camera can be regarded as a room lighted by a window (the opening of the lens), the plate being on the opposite wall to the window. In a room 8 feet long, lighted by a window 1 foot square, the opposite wall would receive just the same illumination as in a room 8 yards long lighted by a window 1 yard square. Therefore, when an optician marks his stop *f*/8 it has a definite value, whatever the focus or kind of lens. Let us now glance at the use of an actinometer in estimating light variation caused by the interference of surrounding objects. (A number of slides were shown, illustrating this point and showing how the actinometer held so as to test the light actually falling on the subject made allowance for various obstructions shutting out the illuminating sky.) I wish to note that in my exposure system I make no variations in the value of the subject caused by these changes of lighting. In the exposure-table plan, a variation of at least 1 to 100 would be required for the subjects illustrated, ranging from landscape to interior. In my system I value all subjects of average color, whether they are landscapes, buildings, portraits, or interiors, at 100, and it is only when there is exceptional variation in reflecting capacity of subject, as snow scenes, sky, sea, or white objects, that variation need be made on account of subject. (Slides illustrating the different subjects for which a variation in subject value is required were thrown on the screen.) Where the camera has to be racked out for copying near objects or for enlarging, a fifth factor, which I term *f*, has to be considered, and here the extra *f* scale in the standard meter becomes useful. In the simpler pattern meters even the subject scale is omitted, and it is presumed that the subject value is 100, as it is in nine cases out of ten. In the tenth case a variation from indicated exposure can easily be made.

CALCULATING WITH SLIDE RULES.

Now let us see the principle by which the variation for plate, diaphragm, and light can be calculated in practice. These three factors, with the final one of exposure, are the smallest number which can

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be considered in any exposure meter. The means of calculating is always based on the ordinary slide rule, and countless variations can be made on this. (A lever slide illustrating the calculation was shown.) It is easy to devise a bogus simplicity by reducing the number of the scales, but the trouble in using a meter is in hunting out the four values, and I have always thought that it is really most simple to provide a separate scale to each factor. The meter can then be set for the two factors, plate and diaphragm, which may not require alteration that day, and only the figures for light and exposure have to be sought for. Where two scales only are provided, all four values must be hunted out each time. In the dial meter—(an illustration of working this was thrown on the screen)—only the figures actually wanted appear in sight, and the meter remains set for plate and diaphragm. The eye is therefore not confused with a large number of figures.

RELATIVE STANDARDS OF SPEED.

As at different times articles have appeared in the *British Journal Almanac*, giving the supposed relations between the speed values in my meter and those in the Wynne meter, I presume that the comparison has some interest. I throw on the screen an illustration of the slide rule calculator which, in conjunction with a separate actinometer, was the first exposure meter issued by Mr. Wynne. It came out in 1893—three years later than mine. Simple numbers are used to express the speed of plate; the standard of speed is identical with that in my meter, and the result of a calculation with the same figures is the same. For example, my standard for a plate speed *l* was that with *f*/8 and two seconds in actinometer time (best summer light) it would require for an average subject two seconds' exposure. The Wynne slide rule, which is an application of the ordinary carpenter's slide rule, gives the same result, the central row of figures serving both for actinometer seconds and for exposure seconds. This identity with my system can be verified by reference to the illustration of the slide rule in the *British Journal Almanac* of 1894, p. 820. As Mr. Wynne selected the Manchester Amateur Photographic Society as a medium of relating how he worked out the plan of his instrument, I feel bound, also, to record the fact that in a letter dated September 1, 1892, Mr. Wynne, in ordering a refill for my meter, mentions his having used two previous refills, and winds up: "I find it very useful and reliable." In the subsequent watch-shaped exposure meter issued by Mr. Wynne he omitted the third row of figures, and without making any change in his (or rather my) standard of calculation, he now called the speed previously called *l*, by the name of the *f* value opposite it on the scale, namely, *f*/8. The corresponding values of Watkins' plate speeds and Wynne's plate speeds can, therefore, always be found opposite each other in the illustrations in the almanac I have mentioned.

INTERIOR WORK.

When photographing indoors the length of exposure has long been a difficult problem which the exposure tables scarcely attempt to solve. The judgment of the eye, too, is apt to be at fault in dealing with feeble lights, and it is in this work that old and experienced photographers have most frankly acknowledged their indebtedness to the actinometer. Practically, however, no one cares to spend the time in testing indoor light before making an exposure; and it was my introduction of the plan of using such a stop in the lens that the actinometer and camera exposure should be equal, which brought the actinometer or exposure meter into use indoors. With this plan the actinometer is placed in one of the darkest parts of the subject, and the lens uncapped at the same time, and left uncapped until the paper darkens to tint. A quarter tint suitable for this plan is provided with all meters and the new actinometer. With Ilford ordinary and *f*/22, the camera exposure will always be the same time as the darkening to quarter tint.

Using rapid plates and modern anastigmat lenses, we sometimes want to use a larger stop than that proper for the quarter tint. The first visible darkening of the sensitive paper is equal to a sixteenth tint, and with rapid plate of 150 on my scale *f*/22 can be used and the camera exposed

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for just the time which elapses before the paper commences to darken.

PINHOLE WORK.

Good photographs can be taken without a lens by means of a pinhole aperture, and the exposure for these can he calculated with exactness. I show a few examples. For every distance from plate to pinhole there is a sizehole which gives the best definition. In the little book *Exposure Notes* I give a table of the right sized sewing needles to make these holes for each distance, and also the diaphragm, which has an area of sixty times the pinhole.

HAND CAMERA WORK.

It does not seem, at first sight, advisable to calculate exposures for snapshots, but I found, working in Switzerland, with a shutter adjustable to slow speeds and a Stigmatic lens opening to *f*/6, a great comfort in the little hand-camera calculator screwed to my camera, telling at a glance what shutter speed to use with a particular stop, or *vice versâ*. Here is a scene taken with slow shutter in the dark shadow of pine woods, which I should not have attempted if the actinometer and slide rule had not told me it was feasible. (Other instances of the use of the meter among the towns and glaciers of Switzerland were shown, both snapshot and time exposures being developed together by timing only.) I will now give a few illustrations of three-color work, in all of which I used the actinometer for determining the exposure through the blue screen. In concluding the outline (for much is omitted) of systematic exposure, let me remark that I deal only with the tools of our science, and not with that distinct branch, the artistic use of tools. A man may use over or under exposure for artistic effect, but let him not despise the methods providing a definite standard, which he is at liberty to follow or not, as the mood seizes him.

A FEW WRINKLES.

BY A NEWSPAPER MAN.

To read the photographic papers one would imagine that photographers were divided into two classes, and two only. There are the professional portraitists and the amateurs. Beyond these nothing. In truth, the men who strictly belong to neither of these classes must be counted by hundreds, if not thousands. The scientific workers—medical, astronomical, metallurgical, etc.—are numerous; and even more numerous must be the commercial men who work without studios, some of them in specialist work, others ready to undertake anything which will turn a dollar. I am one of this latter class, being at the call of a well-known newspaper; and when not working for them busy on other commissions.

I was once employed in a dispute between a railway company and a property owner. It was one of those squabbles which an arbitrator should have settled on the spot; but it must needs be argued before a judge ten miles away and witnesses brought up on each side to swear to size and general appearance of buildings which were in plain view of anyone who cared to go and see them. The company had employed a clever photographer, who had been at work on the premises for a couple of days. The lawyer on the other side knew a little about photography, and he sent for me. My cue was to give as imposing an appearance as possible. Had I owned a telephoto lens I would have included a view from a mile away; as it was I went to work with wide or narrow angle lenses as seemed best for each individual view, choosing a low view-point, so that buildings seemed to tower above others in the next block, and indoors being careful that no chairs or other furniture came too near the wide angle, especially in a small room. Then I made a few views of brick and clap-board walls with a three-foot measure nailed against them, and called attention in a marginal note to the number of courses in the whole height of the wall and the number included in three feet. The work proved very useful, for it scared

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the other side so that they didn't produce *their* photographs, and so two photographers and the lawyers profited at the expense of those who went to law.

I always had a dislike for backgrounds which are blocked out with paint. Those hard outlines to chimneys or to cogwheels are evils to be avoided if at all possible; but it is not always possible. I once had to photograph a log shanty which was deep in dark hemlocks. It was a summer whim of a few gilded youths, and they wanted a souvenir of their building. But in spite of all my efforts I could not get a picture in which the shanty was not mixed up with hemlocks. All was one monotone in the real thing, and the photograph was faithful in its translation. At last I got a wrinkle, and from an amateur. On a damp, still fall day I built a semicircle of twigs and damp leaves—slightly splashed with petroleum—around the back of the shanty, and by a lot of trouble got this semicircle on fire. The chief product was a dense smoke, which made a unique "living" background. I photographed with a lens of full aperture, and had a friend with me to let off a half charge of flash powder inside the shanty, just sufficient to slightly relieve the dead blackness of the open door and window. Choosing a damp still day I got a heavy dense smoke, and a smoke which rose in a straight cloud; and I was free from any fear of starting a fire which might spread. I have used this same wrinkle twice since for very different subjects.

A couple of years ago there was a photograph exhibited in a leading showcase in this city. In it President McKinley, seated in a comfortable chair in a garden, was chatting with Vice-President Hobart. After Mr. Hobart's death the picture reappeared, but now Mr. Roosevelt occupied the second chair. It was done by double printing, very apparent when the photograph was closely examined. This is an old dodge, and I once used it successfully to make snapshots of a Governor's progress as he stumped the country from the rear car of a train. All my "snapshotting" was done in one spot, and without seeing either the Governor or his train. I had lots of views of crowds and several of crowds around a rear car orator. It was easy work to make a 10 x 12 inch bromide and to enlarge a head of the Governor to the same size as the head of the orator. In two of the pictures I added car and orator complete, and in each case the head and waving arms of the Governor, carefully joined, replaced those of the other orator. The pictures appeared double column width, made through a very coarse lined screen, and no one could detect any fraud. Nor was there any vital one, for the average pictures in penny newspapers are merely looked at and forgotten, and a faked photograph is as truthful as a "sketch on the spot," whether the latter appears in a one cent yellow or a twenty-five cent monthly.

I find it very useful to either try, or make a note of, every wrinkle which may at any time be useful. If I merely read a thing I forget it; but once I have done it, it is fixed in my mind. If I run up against a failure I smoke a few pipes over it, and at the end of a week I see a way round the difficulty, and then think what a fool I was not to see it at the time. In very much newspaper work I find it possible to scoop by using an old photograph. The start of last year's boat race—from a bridge fifty yards away—is just as truthful for this year as a picture taken to-day, and as soon as we know that the day is fair and the race practically certain the editor is as glad to have the print as I am to let him have it. The successful newspaper free lance will by using his brains do more business than by tying himself to one paper. One of the old-established New York dailies offered me a place. Twenty-two dollars a week and find my own cameras!

For bromide prints treated in the following manner, increased permanence with a wide range of tones (from red to dark brown) is claimed. One ounce of potassium bichromate is dissolved in a pint of water with half an ounce of hydrochloric acid. This bath is used to bleach the picture to a creamy color. After well washing the print is redeveloped in a solution of one ounce of sodium sulphantimoniate in thirty ounces of water. It is toned with ammonium sulphide, one ounce in twenty of water. Finally, the print is washed and treated with an alum bath.

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PHOTOGRAPHY BY MEASURE.

BY CHAPMAN JONES, F.I.C., F.C.S.

It must be obvious, even to the most superficial observer, that the principle of working by measure is extending in photographic practice. And not only in scientific work and investigations into the phenomena of photography, but in the common everyday practice of the photographer who cares nothing for methods, except that they shall lead him to the end he desires with the least chance of failure or unnecessary expenditure of time. This is the natural move forward and not a passing fashion, and it behoves those who have not considered the matter to give it their attention if they would not be left behind. He who works with most certainty must, other things being equal, work most economically.

There are many who pretend to dislike working by measure, and their dislike is as real to them as the abhorrence of unpleasant medicine, or a dental operation, is to a child. The adult takes the medicine and goes to the dentist of his own free will, because of the subsequent benefit. The idea that working by measure makes the artist into a mere artisan seems to me absurd. I once had two small oval frames made, and each was to have a little ornament at the top and another at the bottom. The ornaments were obviously not symmetrically fixed, and when I objected the maker said that they were "thrown on" (I believe that was his expression) by eye and not by measure. I once employed a mount cutter who cut his mounts lopsided, and he made a similar excuse. I cannot consider that this, which appeared to me simple carelessness, showed that the workmen were getting above the position of the artisan toward that of the artist. I suppose that the painter artist does not compromise his character nor degrade his art when he uses a rule for drawing straight lines with, such as the outlines of steps and similar architectural features. While the student is often debarred the use of facilities, to oblige him to practice various methods, it is the duty of the workman (that is he who works for the sake of the work and not merely to increase his dexterity) to make the most of all available advantages.

Of course, it is possible to push any principle, however good, too far, and so bring it into contempt. Probably most of us would be inclined to sneer at a painter who, after ruling his straight architectural lines, proceeded with mathematical instruments to draw the outlines of the heads of the figures he had to represent. I must confess that to develop in a dark box for a fixed time, though some seem to do so with success, is not a method of work that, up to now, appears to me to be the best, except, indeed, perhaps, when making several negatives of the same subject. But to have some measure of the light available is a necessity that has been realized from the earliest of photographic days. The first practical method of light measuring was, so to speak, a full rehearsal of the photographic operation. With many this still remains the only test—but lazy people always have taken the most pains, and generally paid most expensively for their experience. It is obviously cheaper and quicker to test the light with one of the actinometers that are now made in such variety, than to expose and develop a plate on the subject.

The reasons why actinometers were not used extensively sooner than they were, appear to me to be two. At first, there were none suitable, and photographers found themselves able, by considerable practice, to estimate the light with a generally useful approach to accuracy by taking into account the time of year, the time of day, and the appearance of the weather, and so this method of working became usual. The early practical actinometers, such as the "Woodbury photometer," and the similar instrument introduced later by Messrs. Green and Fuidge, never caught on, probably because suitable sensitive paper was not provided for them. Messrs. Hurter and Driffield, in the introduction of their actinograph, accepted the prevailing custom, and gave an apparatus that indicates the light there ought to

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be, leaving the photographer to guess what proportion of that light there really is. The popular actinometers and exposure meters of the present day measure the actual available light, and that is their strong point. Moreover, they are convenient, and sensitive paper that will keep in good condition for more than a year is provided for them.

I find it practically much more advantageous for all sorts of indoor work to express and calculate exposures in tints without regard to time. In copying, for example, the actinometer is placed by the side of the copy, and the time equal to one tint is determined, and the exposure given for the necessary part or multiple of this. I find it much more satisfactory to provide students with Watkins' "indoor meters," and instruct them to give, say, one tint with an aperture of *f*/11 an exposure that remains invariable with the same subject and the same plate, than to suggest the actual *time* of exposure. The period corresponding to the standard tint varies very much more than many who work in the old-fashioned way would readily believe, even when there is but little obvious reason for variation; but by working with a suitable actinometer, with a plate and subject previously manipulated with success, one has no errors of exposure. With a new subject, or an unknown plate, over or under exposure can be easily corrected, while if the exposure is determined by its duration only, it is quite within the range of the possible to give double the time to cure underexposure, and to have a still worse underexposure than before. I know by experience that it is generally useless and often misleading as a guide for future work to record the *time* of an exposure when working by daylight, unless, indeed, one works only in fair weather, and is exceptionally lucky. But an exposure recorded in *tints*, I have always found a safe guide, though the duration of the same exposure at different times may vary as much as 1 to 8, or even more.

When working with photographic plates, such as negatives, it is often desirable to get some knowledge as to the proportional opacity of different plates, or of different parts of the same plate. Watkins' daylight enlarging test box, and Dawson's density measurer, both recently introduced, are provided to supply a want that has long existed. The more elaborate, more costly, and more exact instruments of the scientific investigator are not at all suitable for the use of practical photographers in their work. So far as I can understand from the descriptions, both Watkins' and Dawson's instruments measure or estimate the average opacity of a considerable area of the plate, and, used with discretion, doubtless such a method will yield useful results. I should generally prefer to compare the opacities of small areas, such as the most opaque parts through which it is desired to produce an effect in the printing process.

The two parts to be compared can be conveniently isolated (and this is necessary) by two pieces of black opaque paper with a hole in each, say a quarter of an inch in diameter. It is convenient to employ as a standard a series of tints that bear a known proportion to each other, as, for example, the series used in the "plate tester" supplied by Messrs, Sanger Shepherd & Co., in which any tint requires twice the exposure to produce the same effect through it as the next but one number below it. A scale to serve the same purpose can be made with tracing paper, or the so-called mineral paper, a thin, transparent paper of even texture, superposing layers of the paper to form squares in which the number of thicknesses is arranged in arithmetical progression. To get the exposure value, or opacity, of the various patches of such a screen, two similar plates are exposed behind it to a uniform light at the same distance, for times varying, for example, as one to four. The two plates are developed and fixed together, and the densities of the squares in the plates matched as nearly as possible, using the two pieces of perforated black paper, as before described. If exposures have been proportioned as one to four, and the first square on the one plate matches the third on the other, the second the fourth, and so on, then the opacity of each square on the screen is double that of the next thinner square. Whatever the proportion is, it is easily determined in this way, and the value of the scale when determined, gives at once by direct comparison the proportional opacities of the com-

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pared parts of any photographic plates, or the exposures necessary to produce the same effect through them. When measuring opacities by an optical method for use photographically, the deposits and the material used for making screens should be free from color; that is, they should be what would be ordinarily called white, gray, or black, otherwise the optical and the photographic effects will probably not be proportional.—*The Amateur Photographer* (*London*).

NEWS AND NOTES.

The Mita Light. The following particulars of this new incandescent lamp will interest those who do enlarging and lantern work. Benzine, ligroine, or gasoline may be used as the illuminant, but benzine seems to be preferable. It is said to give a light of 300 to 400 candle power. A horizontal tube, with the burner at one end and the benzine holder at the other, is attached to a vertical rod fixed on a stand, so that the height of the light may be regulated as desired. Air is pumped into the benzine holder by means of an India-rubber ball, and the benzine thus burns under pressure. A small tray near the burner is filled with spirit to heat the benzine at starting, and the lamp will then give a steady light for some time without attention at ordinary temperatures. Ordinary coal gas and oxygen give a light equal to about 150 to 250 candles. The new light is, therefore, about twice as powerful.

Balloon Photography. It is proposed to photograph the city of St. Louis from a balloon at an elevation of about 2600 feet. The plate to be used will measure 56 x 96 inches, will weigh 180 pounds, and cost $200, according to the newspaper report. The photograph will be the work of George J. Lawrence, an expert flashlight photographer of Chicago, who has already had considerable experience in balloon photography.

Lecturing on this subject recently before the British Aeronautical Society, Miss Gertrude Bacon said that the most successful photographs from balloons were those taken at an elevation of between 250 feet and 3000 or 4000 feet. Instantaneous exposures, she pointed out, alone were possible. Generally speaking, to take photographs of the earth from a less elevation than 250 feet was impossible, since, if the exposures were made so short as to render the effects of motion negligible on the plate, there was not sufficient light to give a good negative. Above a height of from 3000 to 4000 feet, again, it ceased to be worth while to use the camera, since the particles of water and dust suspended in the atmosphere spoiled the sharpness and definition of the pictures. In the equipment, lightness and portability were important, and films were preferable to plates, for the probability of damage from a rough descent had always to be remembered. This fact was brought home to Miss Bacon herself recently, when she broke her arm in a descent with her father, after spending all night in the balloon.

Solutions of Mercuric Chloride. After experimenting two years, Professor Greenish and Mr. Upsher Smith recently read an interesting paper before the British Pharmaceutical Society on the keeping of mercuric chloride solutions. Their experiments included keeping the liquid in the dark, and in white, blue, "actinic green," and amber colored bottles. Three solvents were used —boiled distilled water, ordinary distilled water, and tap water. Solutions in both varieties of distilled water kept almost equally well in all conditions of light and whatever bottles were used, but with a slight advantage in favor of amber glass, this advantage being specially shown under exposure to strong light. With tap water, however, a deposit occurred, except when amber bottles were employed or the solution was preserved in a dark place. The deposit was found to consist in the main of mercurous chloride. It was first thought that a trace of organic matter might be responsible for this, but it was found not to be the case, and tests were next performed with an amount of magnesium carbonate equivalent to the amount of calcium carbonate which might

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be present. The deposit was formed on keeping. Experiments were conducted with English, French, and German white glass bottles, and in all cases a very slight deposit, consisting of mercurous chloride, due to the alkalinity (carbonate) of the glass, was formed, but not in sufficient quantity to affect the solution materially. It was noticed that with tap water, in addition to the mercurous chloride, a number of small ruby prismatic crystals appeared. These at first floated on the surface, but afterward sank to the bottom, where they grew, some of them in time becoming, perhaps, one-eighth of an inch long. These crystals were found to be a compound of mercuric chloride and mercuric oxide.

This digest is taken from *Photography* of March 20th.

Putnam & Valentine, photographers at Los Angeles, Cal., have secured a good deal of profitable advertising from a large photograph of the town of Redlands, Cal., recently exhibited in local art stores. According to press reports, the photograph is two and one-half feet high and five feet long, and was enlarged from an 8 x 10 inch plate. It includes the wonderful panorama of valley and mountain as seen from Cañon Crest Park, the home of A. K. Smiley, with the city of Redlands and its orange groves stretching away to the snow-clad mountains, showing Mount San Bernardino covered almost to its foot with the white mantle. The Burridge mansion, one of the most pretentious residences of the mission style in the valley, shows prominently in the picture. A remarkable feature of the photograph is the fact that the snow can be seen being swirled off the tops of the mountains, twenty miles away, by the gale which was raging along the ridge of the Sierra Madre at the time.

Making Duplicate Negatives. It is often necessary to make a duplicate of a negative, either as a precaution in case of the loss of the original from breakage or stains, or as an assistance in getting a large number of prints printed in a short time. It is always advisable to have a duplicate, or a transparency from which to print a duplicate, of any valuable negative. The procedure is very simple, only the usual appliances are required and any ordinary developer, the method being much the same as in making lantern slides.

Put the negative into a printing-frame, and, in the dark-room of course, lay an ordinary dry plate upon it, film downward. Close the back of the frame, taking care that the pressure of the springs is not great enough to break the glass. The springs may with advantage be eased a little by slackening their screws. Now expose to the light of a candle at a distance of one foot for ten seconds, assuming that the negative is of good printing density; if the negative is thin, put it further from the light; if dense, increase the exposure, or the printing frame may be put as near as nine inches to the candle; but you must judge by the time it takes to print on paper in the usual way.

Now take the exposed plate out of the frame and develop it with the ordinary hydroquinone or pyro-soda developer; only develop it to a somewhat greater density than would make a good lantern slide, since it is required as an instrument for making another negative, and is not to be looked at as a positive for its own sake.

When the positive is fixed, washed, and dried, place it in the printing-frame in its turn, with another dry plate of the same kind. Expose in a similar way, and on development you will have a second negative just like the original, or an improvement thereon, perhaps, since defects, in the original, such as opaque spots, fog from development, etc., can often be avoided in the duplicate.

Any number of duplicate negatives can be printed from the one positive, and by means of an enlarging apparatus enlarged negatives may also be made from it.—E. H. B.

The simplest form of splash preventer consists of a piece of wood rather smaller than the nozzle of the water-tap and long enough to allow one end to enter the tap about half an inch when the lower one rests on the washing dish. When this is placed in position, with the lower end near one corner of the dish, and the water is turned on, a steady stream perfectly free from splashing will be secured.

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A MILITARY CAMP.

Illustrating "Another Use for the Swing-back," by Walter Burke, F.R.P.S. Made with a 10-inch lens at *f*/7.7. Vertical swing used.

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ANOTHER USE FOR THE SWING-BACK.

BY WALTER BURKE, F.R.P.S.

THE RAW MATERIAL.

Illustrating "Another Use for the Swing-back," by Walter Burke, F.R.P.S. Made with a 10-inch lens at *f*/7.7.

THE magnificent defining qualities, in one plane, of the modern flat-field lenses is sometimes at first sight not altogether a convenience. Take, for instance, a ten-inch anastigmat working at *f*/7. It will cover a 10 x 8 plate sharp to the edges at full aperture, or, at any rate, that generally used by myself, one of the set "D" of the Ross-Zeiss convertible anastigmats, will, and I have no doubt there are in the United States similar lenses which will do the same.

Supposing it is necessary to photograph a row of men, as is frequently the case in military work, from one end, and endeavor to get, as far as is possible, recognizable portraits of them. It is not easy. If you focus on the first two or three and then stop the lens down to get the required sharpness in the more distant figures, an exposure sufficient to show the features in the sunburnt faces, half-hidden by the shadows cast by the brims of the hats, would be so great that there would certainly be movement on the part of some of the men, more particularly as such subjects are generally taken while the roll is being called, inspection, etc., or some other ceremony. I am speaking of press-work, not groups specially arranged for the photographer. It is not always convenient to get the men grouped as you would wish, but results must be attained. The trouble is easily got over by the use of the side-swing to bring the distant figures into focus. No stopping down is necessary, and by this means it is possible to get absolute sharpness in every figure, and a quick shutter exposure will give a fully-exposed plate into the bargain.

In taking groups of the ordinary type, such as football teams, where equal prominence must be given to every face and none be sacrificed to so-called art principles, the vertical swing comes into use, and it is then possible to work at a much larger aperture than would otherwise be the case, which is something worth working for. The group I send is not a thing of beauty, but illustrates the idea. It was made at *f*/7, and the swing-back utilized. "A Military Camp" was taken under like conditions. In landscape work, instantaneous exposures, more particularly those done

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with the focal plane or other fast shutters on the larger-sized plates, big crowds of people, and a hundred and one other subjects which will occur to the wide-awake photographer, the same principle applies. In practice it will be found to wonderfully facilitate focusing, and will produce vastly superior results to those obtained in the usual way with the same aperture of the lens, but without the aid of the swing-back, the use of which is generally confined to architectural work.

A FATIGUE PARTY.

Illustrating "Another Use for the Swing-back," by Walter Burke, F.R.P.S. Made with a 10-inch lens at *f*/7.7.

THEATRE PHOTOGRAPHY AND THE NEW FLUID LENS.*

BY EDWARD F. GRÜN, L.R.C.P. LOND., M.R.C.S. ENG.

At the present moment, in view of the approaching Coronation, the attention of a large number of photographers is directed to the consideration of the possibility of photographs being taken in very dull or bad light and to the means available for obtaining photographs by the ordinary artificial light, such as is in general use at public assemblies. Having for some time devoted myself to these questions, and made many experiments, I venture with some diffidence to record their result.

My first experiments were made with the idea of photographing theatrical performances, and since then many of my

DR. GRUN IN HIS STUDY.
Taken with the fluid lens.

* Reprinted from Photography, March 27, 1902.

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photographs have been taken under the same conditions, so that I have a roughly uniform standard of lighting for comparison purposes. For this purpose I have had permission of Mr. H. Cecil Beryl, the manager of the Theatre Royal, Brighton, to photograph at that theatre, where in a general way a lighting value on the stage of about 3000 candle power is made use of. This is not a very large illumination, and the majority of modern theatres possess considerably greater. The London Empire has ten times as much—namely, 32,000 candle power—ordinary daylight being estimated at about 500,000.

To secure a well-exposed negative at the Brighton Theatre Royal:

With an $f/3.5$ lens, fifteen seconds' exposure was necessary.

With an $f/2$ portrait lens, five seconds' exposure was necessary.

These exposures were made with a camera placed as far back in the theatre as possible—namely, a distance of about twenty-seven yards. Contrary to what is the case with daylight photography, the length of exposure necessary in these indoor artificial light subjects decreases as the camera is brought nearer to the subject.

Having arrived at these results, it became apparent to me that it was not possible to obtain instantaneous exposures of one-tenth, or even of one-fourth, of a second by the means ordinarily at one's disposal, and the question arose in my mind whether by any alteration in the structure of a lens it would be possible to increase its aperture or decrease its focal length so as to increase the rapidity of the lens sufficiently to reduce the exposure from four or five seconds to one-fourth or one-tenth of a second. Having a certain amount of experience with the oil immersion lens of the microscope, the idea occurred to me to see whether or not something similar might be applied to the photographic lens system, and, if so, to what extent. I speedily ascertained that it was possible.

By introducing the somewhat yellow cedar oil into the air space between the combinations of an ordinary rectilinear lens the focal length of the lens will be at once reduced to about one-eighth; in the case of the eight-inch lens which I first employed it came down to a little over one inch. With this lens it was possible to get a very fair picture at the theatre with an exposure of one second. But in this form the lens was of a very crude type. The chromatic corrections were altogether upset, and it suffered from want of rectilinearity. (See Fig. 1.)

FIG. 1.

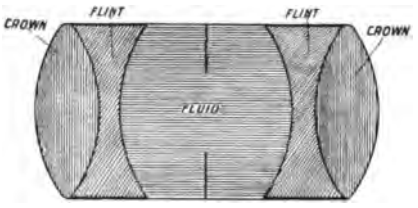

FIG. 2.

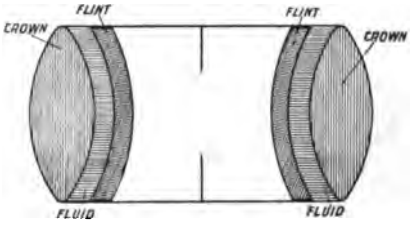

Fig. 1 shows the lens first employed, which consisted simply of an ordinary doublet with the air space filled with cedar oil.

Fig. 2 is the system ultimately adopted, in which the exterior lenses, double convex crown, and the interior, concavo-convex flint, enclose between them the fluid.

En passant, I must caution my readers not to attempt this experimeent with any valuable lens, as the cedar oil will dissolve the Canada balsam, and very quickly spoil the lens.

The result just described having been arrived at, it seemed to be sufficiently encouraging to go on with. Attempts were made to get a practical working lens, free from the defects in the first form, and after some six months' experimenting a satisfactory lens was evolved. (See Fig. 2.)

A variety of fluids have been tried, the essential point being to arrive at a perfectly transparent fluid of a high refractive index and low dispersive power. With the

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refractometer all the most likely fluids have been thoroughly tested, and the fluid which is now generally made use of and appears to give most satisfactory results is an essential oil with a refractive index of 1.4985 and a dispersion of .0113. The dispersion of this fluid being very low, it has hardly any appreciable effect upon the chromatic corrections of the crown and flint glass, while the refraction and transmission of light is considerably increased, a lens which without fluid would have a rapidity of *f*/2 having its effective aperture increased to *f*/1.1 by its means.

This much having been said about the construction of this form of lens, it may be interesting to describe the capabilities from the point of application to practical photography. I will describe the practical possibilities, the variations all being the result of personal experiment. It is possible with such a lens

To take a photograph in the theatre with a quarter second exposure when the footlights only are being used.

To take a photograph in one-fiftieth of a second when two focused limes are used.

To take a biograph film in a theatre with two focused limes with an exposure of one-thirty-second of a second to each picture.

To take a photograph with an illumination of forty-eight candle power in an ordinary room with an exposure of five seconds.

To take a photograph at midnight with one minute exposure with a fair moon.

To take a photograph at midnight with five minutes' exposure with no moon.

To take a photograph at midnight on a pitch-black night, with no apparent light, in fifteen minutes. Evidently there is always some light about that is not capable of being perceived by the eye, but which will affect a photographic plate and impress upon it objects quite invisible to the eye, as I have found from actual trial. Of course, the covering power of such a lens will be proportionately small, and may be taken roughly as being equal to the diameter of the lens. As many photographers at the present day confine themselves almost entirely to lantern slides, it may be stated to fill a plate the size of a lantern slide a lens of three inches in diameter must be used. When, however, the lens is stopped down to *f*/2 or *f*/3, a great increase of covering power is obtained, and the same lens would then nearly cover a half-plate. The aperture *f*/1 is only seldom required, but it is invaluable to have at one's disposal when it is required. It is, therefore, advisable to use

MISS BEECH. MISS LENA CARR.

Taken during the performance of "Patience" at the Theatre Royal, Brighton, Eng. ¼ second exposure at *f*/1.1 with Grün's fluid lens.

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a camera to take any plates from half-plate to 3¼ square, and, as the extension is very short, such a camera need not be very bulky.

The question of focusing is one that requires consideration with these very poor-lit subjects. In my own case, I have found it most convenient to adopt a system of pegs working in holes, each hole being graduated to a known distance. The lens is pushed into its jacket until it is stopped by the peg.

It can thus be focused on the darkest night by simply pushing it home to the peg inserted in the hole suitable for objects at the desired distance.

[We have reproduced two of the large number of illustrations of work done with the new fluid lens of Dr. Grün, as given in *Photography*. In view of the large size of the lens, a necessity when its diameter must equal if not exceed its focal length, most of the work with it has been done on very small plates, and our illustrations are in consequence enlarged from two to six diameters. An editorial on the subject, also from *Photography*, is given on another page.—Ed. W. P. M.]

LAST CALL TO THE IOWA CONVENTION.

The Twelfth Annual Convention of the Photographers' Association of Iowa will be held in Des Moines, Iowa, May 20th, 21st, 22d, and 23d, inclusive.

The Executive Committee have been planning for some time to make this the most successful, by way of attendance, display of work, demonstrations, lectures, etc., yet held, and they request the co-operation of all Iowa photographers in urging those to attend who have heretofore stayed at home.

The rules governing last year's convention are still in force; the awards, ratings, etc., are also the same, but the Executive Committee deem it advisable to get the State Convention on the same basis as the National, in doing away with prizes entirely and only furnish those who make displays with a certificate of rating, as the awarding of prizes has served to work disaffection and does not conserve to the best interests of the Association. This question will come before the meeting.

A cheap railroad rate is offered this year on account of the State G. A. R. encampment being held in Des Moines the same week.

Everyone feels the need of a vacation and some recreation. You can't spend four days more pleasantly or profitably to yourself and patrons than by attending Iowa's great convention and hearing the practical papers by well-known professional photographers, demonstrations in papers and plates, and various processes by experts. Besides this, lectures that inspire you to greater achievements in your chosen profession, and, not least, a social time among people who know how to be social and give you a genuinely good time. It's well worth the little expense and effort. J. H. Reuvers, President, Pella; W. C. Edinger, Secretary, Des Moines; F. W. Medlar, Treasurer, Spencer, Iowa.

More Color Photography. That indefatigable lady amateur Miss Acland, of Oxford, England, has been experimenting in tri-color printing on paper, and some of her prints were exhibited at a recent biennial exhibition of the Oxford Camera Club. Miss Acland and another member of the Oxford Camera Club, Mr. Minn, have worked out a method of their own, details of which are not yet published, but the departure starts from the Sanger-Shepherd tri-color process for lantern slides.

When fixing bromide paper be careful that the paper is well covered with hypo, face downward. A glass rod is useful to push the print down into the hypo and move it about the dish. It prevents air-bubbles forming, stains, and imperfect fixation.

Over-printed bromides should not be thrown away. If placed in a solution of alum and hypo over a stove they will not only tone to a pleasant brown color, but will gradually reduce in density.

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PORTRAIT.

By D. D. Spellman, Detroit.

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EVERYDAY PORTRAITURE.
By the Carbon Studio, Marietta, Ohio.

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OUR PICTURES.

A LITTLE PURITAN.

By A. W. Goodman, Belvedere, Kent, Eng.

THERE is a wide range in the illustrations offered in our pages this month. The engravings from Mr. Spellman's beautiful portraits will be appreciated by our operators, who have learned to expect inspiration, coupled with satisfaction, in the examples of studio work generously given us for publication by this gifted portraitist. We confess that our engravings lack the soft charm and breadth of the originals, but our readers have learned by this time that allowance must be made for the half-tone process.

The excellent technical work of Mr. Walter Burke, F.R.P.S., gives us an opportunity to see how splendidly New Zealand acquits herself in photography. We wish most heartily that work of this sort were more plentiful than it is among us. Mr. Burke is the official photographer of the *Weekly Press*, Christchurch, a journal which, by its illustrated special num-

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EVERYDAY PORTRAITURE.
By the Carbon Studio, Marietta, Ohio.

bers, has won the praise of all interested in illustrated journalism. In his everyday work Mr. Burke has abundant opportunity to test to the utmost both his photographic skill and the resources of modern photography, and his contributions to photographic literature have therefore a special value to practical men.

"The Little Puritan" is one of two charming studies sent by Mr. A. W. Goodman, of Belvedere, Kent, Eng. It will appeal especially to those who love to portray the spirit of their subject as well as its merely physical aspect. Mr. Goodman has happily caught the feeling of "The Little Puritan," and we are glad to give place to his work in our pages.

The portraits from the Carbon Studio, Marietta, O., have been chosen to show our readers how the smaller cities are progressing. The two workers who conduct the Carbon Studio, Mr. Will H. Brigham and Miss Helen W. Clogston, are among the most progressive of Western photographers. In a later issue we hope to write at length of their business methods and enterprise. The engravings are taken from their everyday work, the quality of which deserves high praise for its many excellent qualities.

The little print titled "Rosebud" gives us a simple but wholly characteristic picture of Mr. Clench's dainty model, and conveys the valuable suggestion that oftentimes the best way to pose is not to pose at all. It is selected from an interesting parcel of work recently received from Mr. Clench.

The principal lesson from all these examples is that thought put into the daily opportunities in and out of the studio will bring its reward. The photographers whose work is here noticed are conspicuous for the evident thought given to the subject, and its portrayal under the most favorable aspect. The man who thinks as he works is bound to succeed.

Doctoring Negatives. Ordinary mountant, spread thickly on the back of a negative, is useful when doctoring negatives. It can easily be worked on with a stump or black lead, can easily be scratched away from the parts of the negative where it is not required (much easier than when matt varnish is used), and there is no difficulty in removing it altogether with a damp cloth if the doctoring is not satisfactory.

Hydrochloric acid, which is so useful for cleaning dishes, measures, etc., will also clean pyro-stained fingers. It should be well diluted and rubbed on with a tuft of cotton-wool. It is always well to keep a solution of this acid (one part to five of water) in the dark-room. It may be used repeatedly.

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RECOVERY OF FADED NEGATIVE IMAGES.

SOME two years or more ago we referred to the lack of permanency in a number of star-negatives, the property of a learned British Society. In these negatives it had been noticed that many faint stars, which were at first clearly visible, had absolutely vanished, and some of those which were still recorded in the film were growing fainter. There was apparently no good reason why this fading process should not continue until the negatives were entirely worthless. The cause of trouble had apparently been careless storage, and we pointed out that, had reasonable precautions been taken in the first place, the disaster might have been avoided. The simple expedient of varnishing would, if adopted in the first instance, have been a sufficient security.

We have just received a letter from an American astronomer-photographer, referring to this very trouble of fading, and asking if prevention is the only remedy or if a cure is possible. The English plates were fully restored by, we believe, Sir William Crookes. He experimented first with some negatives, the number of stars on which, when first taken, was known. After his efforts the stars were again counted, and they totalled the same number as had been there in the beginning.

Every missing star had, therefore, reappeared. He obtained this satisfactory result by first redeveloping the plate and then toning the images with gold. First the plate was brought to a workable condition by soaking for three hours in distilled water. The plate was then developed with pyro-soda for from ten to fifteen minutes, in the dark, and after development was well washed (Sir William was thorough in his washing all through the operations). Next the plate was placed for half an hour in a rather weak (15 per cent.) solution of hypo, followed by a three-hours' wash in running water. The plate was next colored by an acid bath—alum and sulphate of iron—and again washed, this time for six hours. The plate was now ready for the toning, the bath for this being an ordinary strength sulphocyanide gold, composed of one grain of gold to eight ounces of water and seven grains of sulphocyanide. The result was successful in recovering all the missing stars.

ROSEBUD.

By F. B. Clench, Madison, Ga.

To remove silver stains from negatives, immerse the negative in the ordinary hypo fixing bath for plates, and let them remain for one day or more till the stain has vanished. Then wash for five or six hours, and they will be as good as they were the day after developing.

To prevent thin mounts cockling it is a good plan to paste on the back of the card a piece of thin white paper the same size as the print.

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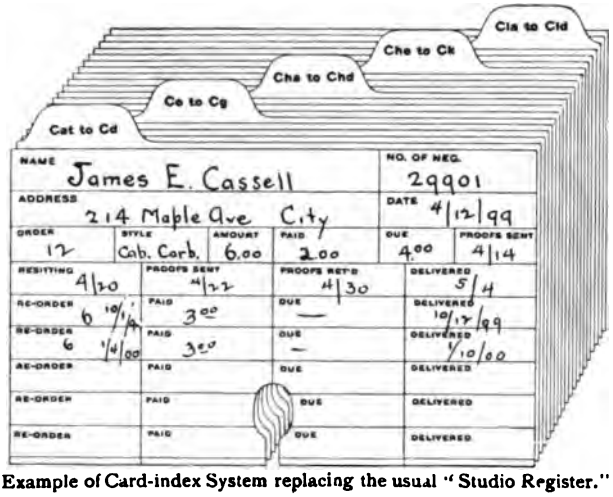
THE CARD-INDEX SYSTEM APPLIED IN PHOTOGRAPHY.

BY C. G. ADAMS, OF THE YAWMAN & ERBE MFG. CO.

FIG. 1.



Example of Card-index System replacing the usual "Studio Register."

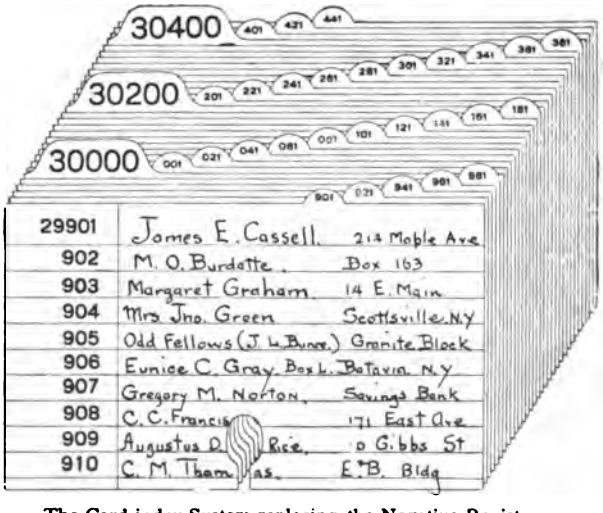
No more registers around—no more having several indexes to look over before finding the name you want; no more "fixed" indexes where you may have more names under some letter than space allowed, and so have to carry them to some other page—in fact, no indexes at all, and yet an arrangement where everything is indexed in absolute alphabetical reference, because the Card Index for photographers has done away with these annoyances and replaced them with a system that is surprising in its completeness.

Instead of a "register" to keep a record of orders, a card is used for each order. This card contains space for recording all the information that could be desired, and, if necessary, the customer could be asked to sign the order on the reverse side of the card.

The cards, 5 x 3 inches, are filed behind index guides in drawers. These index guides may be had from 20 up to 6000 sub-divisions of the alphabet, so that you can put your finger on any name you want almost instantly, even though the order may be years old. Compare this to looking through several indexes where all the names are under one letter, and not arranged according to any further subdivision.

These cards need not be filed away in the drawer until after the order is filled, then you will have all "unfilled orders" together (perhaps arranged in order of date of delivery promised), and these few cards can be gone over every morning to let you see what work must be rushed that day. In this way you will be able to keep track of your work in progress, and see that no promises are forgotten nor any orders delayed in the printing room. Another card record of your negatives can be kept as a cross reference. By this you know at once to which order a negative belongs.

FIG 2.



The Card-index System replacing the Negative Register.

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These cards have numbers, 10 on a side, and each card has a tab on it upon which is printed the last three figures of the *first number on the card*. As these cards make their own record of the units and tens, it is necessary to have guides for only every 200 numbers.

Another way for numerical indexing is, doing away with the tab on the card, and simply placing the five cards (each having 20 numbers) behind "hundreds" guides.

Every photographer should keep a record of "possible customers"—fraternal orders, schools, etc.—beside "good people," "good subjects," so as to either solicit their trade directly or to influence them in some way to become customers.

which would make it easier to send circulars or letters to those in each place separately.

A "stock account" is something that can be kept in no way as handily as on cards.

For the amateur who wants to have a record of each of his negatives there is nothing like the card system. By carrying blank cards with you they may be made out on the spot—plate, stop, exposure, time of day, and year, light, etc. After making prints—carbon, bromide, Velox, etc.—the "number of tints" for making the carbon print, or the distance from light, etc., for making Velox prints, may also be recorded on the card.

FIG. 3.

NAME LOCATION Swamp—		No. 843
Patchogue. L.I.		
DATE Oct 4/01	HOUR 5.45 P.M	
CONDITIONS Cloudy- damp		
LENS Plastig.	STOP 16	EXPOSURE
RESULT WANTED misty effect		
DEVELOPMENT pyro-metol - 4-1		
TIME FOR VELOX 10 sec 8" 16 W.P. Electric	TINTS FOR CARBON 3½	

This "possible customers" list can be kept in no better way than by the card system. If a city has the trade of surrounding towns, the "possible customers" of these places may be kept under guides made out with the names of these towns,

These cards may be filed according to name or subject, behind either alphabetical or geographical guides. The negatives will be numbered, and a number record of them may be kept in the same manner as outlined under the system for professionals.

STUDIES OF TREES IN WINTER.

A DESCRIPTION OF THE DECIDUOUS TREES OF NORTHEASTERN AMERICA. By ANNIE OAKES HUNTINGTON. One volume, 198 pages; cloth, illuminated cover. Knight & Millet, publishers, Boston, Mass. $2.25.

THIS very interesting work is evidently from the pen of an enthusiast on her subject, and, judging from the illustrations, she is also an expert photographer. The number of full-page beautiful half-tones interspersed through the text show great care in their selection for the purpose of illustrating the matter, something not always as well thought out in publications as one could wish; for is it not so that the suspicion sometimes asserts itself that the text is an attempt made to fit the pictures in works of a similar educational intent? Here, however, we have the photographs that illustrate, whereby one can, with a very little knowledge of trees, readily pick out most of those and name them, even without the aid of the legend.

Beginning with an instructive chapter

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on the structural detail of a tree, one is reminded of the fact, seldom realized, that the central portion or heart-wood of a tree is dead, and that trees can and do live for ages with only the outer layer or sap-wood to carry on the work of bringing forth the annual crop of leaves, blossoms, and perhaps fruit, each in its season, with unerring precision.

Each group or family of trees is treated separately, the author giving the botanical affinity, geographical distribution, and uses to which the various kinds are put in the arts and manufactures. The reader is also treated to the English rendering of the Latin names. How much better it is to try and encourage students to learn the correct names than to try and identify trees or other plants by common ones that are often local, or at most of little value away from the locality in which the tree or plant is found to be indigenous. For example, at the end of the second chapter we are told that the proper name of the horsechestnut is Æsculus hippocastanum, from hippos, a horse, and castanea, a chestnut, an allusion to the fruit which is made into horse medicine in Turkey. This method is followed throughout the book.

It is more especially our province to point out the excellence of the photographs. Many of them are of exquisite beauty as well as of technical value as illustrating the landscape effect produced by the matured tree, while the different characteristics of the various members of each family as seen in their bark or trunks through the eyes of an expert with the camera and the lens. It is thus made easy to tell the difference between the sugar, silver, and rock maples from the moosewood maple with its prettily-striped bark. By the same method we learn the differences in the kinds of ash, walnut, and the birches. So on to the end of the book. The photos of the lower part of the stem of a canoe birch tree, on page 58, is so true to life that seemingly one can almost grasp it. The same is true of the yellow birch and the red birch, with their rougher exteriors. Special mention should also be made of the illustration of the black cherry and the pretty bit of landscape that combine so happily the family of willows and the water nearby. In fact, of the nearly seventy photographs, there are surprisingly few that are not of artistic conception as well as of technical value. The book is also made instructive by the introduction of twelve colored drawings of twigs and buds, which should be a great help in identifying the various families in their winter garb. The originals of these are the work of Mary S. Morse. They are a great addition to the book.

It should be added that none but deciduous trees—*i. e.*, those that lose their leaves in winter—are included. The evergreens, such as pines and spruces, are no doubt reserved for another time, for one cannot but hope that Miss Huntington will not rest satisfied with this initial effort at making others see nature as she does: with eyes trained to see all that is beautiful in what to many is a dreary season of the year.

An introduction to the work is provided by Prof. C. S. Sargent, the eminent and perhaps greatest living authority on trees and the author of the *Sylva of North America*. No doubt his hearty indorsement of the book will be seconded by all who peruse it and are led to discover "tongues in trees." The whole work is a charming means of making us better acquainted with those interesting companions of everyone who loves to ramble in "God's out-of-doors," and adds much to our knowledge. The publishers have done everything possible to make a handsome and acceptable volume.

A REFERENCE LIBRARY OF ART REPRODUCTIONS.

We have already called attention to the work which the libraries may do for art education by making choice collections of art reproductions, giving periodic exhibitions and supplying facilities for lectures and conferences. The time is evidently come for this kind of work, and all such efforts will meet with an aroused public interest. This is shown most significantly in the great success of the various series of cheap art reproductions. Many are in the field. They constantly increase their scope,

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and at a price ranging from one cent to five, these reproductions of great works of art make their way into school and home. All these series appear to succeed, and success is gained only through an enormous circulation. The service which these enterprises render, and which the art departments of the smaller libraries may aspire to, is akin to that of the circulating library. The aim is to convey information and to cultivate taste concerning all matters of art. There is another service which the greater libraries may render—namely, that of making complete collections of reproductions for the use of special students of art history—in effect, reference libraries of art.

It is the recent advance in the art of photography which has made it possible to study under one roof the art of the world. The isochromatic photograph is, for the trained eye, a sufficient record of any work of art. The enterprise of photographers has now gone so far that the more important pictures, statues, and drawings in public galleries have been adequately reproduced, and a good beginning has been made with the private collections. Meanwhile the price of such reproductions has become so reasonable that the making of a student's collection becomes rather a matter of discrimination than of sheer expenditure, and the photographs are now so permanent that the risk of the deterioration, or even of the total destruction, of a collection is quite obviated. The utility of such a repository is obvious. If no study of reproductions can ever replace first-hand knowledge of the originals, it yet is an indispensable complement to such study. It has, in fact, certain distinct advantages, for in the art library the works of a master, which are scattered through a score of galleries in many lands, may be placed upon one table, and the comparison of work with work, which otherwise would usually depend upon that fleeting thing, the visual memory, may be made in all leisure, photograph being confronted with photograph. It is the perfection of photographic reproduction which has revolutionized art history, making what was previously matter of opinion matter of demonstration, and raising art criticism to the plane of the other historical sciences.

That American librarians have laboriously built up reference libraries in the historical sciences, philology, and natural science, while virtually slighting the field of art, is very natural. In the first place, there was a superstition that art history must be studied chiefly in books, or, in another view, only in galleries. The fact that photographs and similar reproductions are the indispensable apparatus of the art historian has only lately made its way. This kind of study was a very new thing, and tainted with the suspicion of amateurism. Only a very liberal librarian—one who would strain the last point for a minute palæontologist or entomologist—could be expected to appropriate good money and devote unwonted pains to the benefit of people who merely wanted to look at pictures.

This attitude of depreciation has changed as art history has come to be a recognized science. Many librarians have given their energies to this new and fruitful field of library activity. Boston, though with a sadly insufficient appropriation, still leads in the completeness of its collection for the study of the fine arts. The Avery Library at Columbia University and the Cooper Institute have notable collections for the study of architecture and the industrial arts respectively. In Brooklyn the Pratt Institute and the Brooklyn Institute have made good beginnings, and doubtless many other libraries throughout the country have done something in this direction. We believe that many of the great libraries would undertake such collections if they could be fairly informed of the probable expense of an art department—its first cost and charges for maintenance. Benefactors, too, would probably adopt the idea readily if it came to them in a practical form. As with any new project, the question of ways and means is all-important.

Here Sir Martin Conway, late Slade Professor of Art in Cambridge University, England, has some valuable suggestions in his recent book *The Domain of Art*. He writes:

"The great age of Italian painting from Cimabue to Tiepolo might perhaps be fairly completely represented by 20,000 photographs of pictures and drawings. . . . The cost of the photographs would not be

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less than £1000. They would have to be mounted, boxed, and shelved for purposes of general reference by students, and that would cost at least £1000 more. In practice the whole cost of such a collection would work out at nearer £3000 than £2000. That would enable us to produce a kind of illustrated index, chronologically classified, of all the chief paintings and drawings that have come down to us from the old Italian schools."

It is a comparatively simple calculation to deduce from this the probable cost of a complete collection for painting. Assuming that Italian painting, including drawing, comprises rather more than half of what would be necessary for an art-reference library, and remembering that photographs for modern painting are relatively more expensive, the minimum cost of a collection for painting may be reckoned at double Sir Martin Conway's figures—that is, £6000, or $30,000; the maximum cost might fairly be put at £9000, or $45,000. It would take several years, under ordinary conditions, to buy, mount, and properly classify the initial collection. Afterward the cost of accessions would be comparatively small. The expense of maintenance would be at most the salary of a special curator, with an assistant. Much of the work might be distributed to the regular staff. Many of the larger libraries already have a special art-librarian, in which case the additional expense would be comparatively less.

To speak in round numbers, a gift of $100,000 would provide generously for the establishment and maintenance of a reference library of art reproductions. When these facts are known and properly presented we believe it will not be long before the New York Public Library, the Congressional Library at Washington, and one at least of the three great Chicago libraries, will be in a way to add such departments. It should not be forgotten that, while such a collection is primarily for the use of specialists, it can readily be made available also for the general purposes of art education. It would be a valuable resource as well to our artists, for by the use of such a collection they could very readily find the necessary contact with the finest traditions of the past. Under modern conditions, photographs of great works of art are to the young artist what Horace's *Exemplaria Græca* were to the young poet of Augustan times.—*New York Evening Post.*

Dust in plate-holders and cameras is best removed by rubbing the parts with a soft rag and a little glycerine. The rebates of plate-holders should always be thus treated before the plates are inserted.

Pyro spots on negatives can be removed as follows: After fixing, place the plate in a dish and flood it with alum, 2 ounces; citric acid, ¼ ounce; hydrochloric acid, ½ drachm, and water, 8 ounces. The spots will rapidly disappear, and the solution can be poured back into the bottle until required again.

A method to obtain density is to add to the developer a few drops of a 10 per cent. solution of sodium citrate. It is well known as a powerful restrainer. A few drops will arrest development, which will then go on very slowly, the negative growing in density while the shadows remain clear.

Over-printed platinotypes should be allowed to go on printing until the whole image comes out to its full density, and then, instead of being developed, they should be placed at once in the acid bath. Many otherwise wasted prints can be saved in this way, and several pleasing effects obtained.

Mounting glossy tints without losing the gloss may be easily effected. The prints, after fixing and washing, should be immersed in a solution of formalin, one part; water, four parts; rinsed in two or three changes of water, squeegeed onto a ferrotype plate in the usual way, and dried. After stripping off, starch paste or other mountant may be applied to the back of the dry print, which can be rubbed down onto the mount with a piece of blotting-paper, and when thoroughly dry the surface will be almost, if not quite, equal to when it left the ferrotype plate. The print may be immersed in water for mounting, if desired, and it will still retain a large proportion of its gloss.

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"WILFUL WASTE."

BY "AN ONLOOKER."

SOME months ago I visited a studio in order to be photographed. I knew the photographer quite well, and told him that I was after a dozen prints. He knew that there was no chance of getting the price of an enlargement, or any other extra, out of me; and he knew, too, that a repeat order was unlikely. It was just a matter of ten dollars on the one hand, and of a dozen prints on the other. When I turned up at the studio there were no other customers there, and no appointments on the book, so we had the morning to ourselves. I sat in a low, comfortable chair, and the camera was pointed at me. He was one of those men who understood his business, and without, apparently, any posing or arranging, he went for me. At the end of an hour I protested. It had been one continual trotting to and from the dark-room to change plates, and sixteen or eighteen exposures had been made. This seemed to me altogether too much of a good thing on a ten-dollar order. But he protested that it was all right. "I've just got a case of plates in this morning, and it is good practice," "Just got a case of plates in?" Yes, and shortly he would get the bill and write his check. You know the price of 5 x 7 plates; probably, if I would have allowed him, he would have let 25 per cent of the amount of my order go to the platemaker. The good practice cry is a weak one from a master photographer, and in this case I fear it could not be called a true one. The truth is, it was a question of waste, a drain on the business which it could not stand.

I once knew a tobacconist who smoked incessantly, and he had grown to be rather an epicure in cigars. They were taken from stock, and one day he wanted to sell me a bargain in cigars. There was no money in the business, and he was trying to realize some of his stock before his creditors realized for him. Last I saw of him he was selling second-hand books and ten-cent fiction, and—he was smoking a pipe. He found that the profits on cheap literature would not run to cigars. It is an old and a widespread story. Many people who cannot *make* a living cannot understand that they are *wasting* one. A storekeeper hands over weekly wages to his clerks, but for himself he puts his hand into the till or the cash register when he wants money. There is no check to say how or where the money goes; nothing but a chronic feeling that profits are not very healthy.

The question of waste is a very serious one in too many galleries. A photographer in the past could clothe himself and buy cigars from the sale of residues. That was an example of clear saving. Every cent that a man received for silver, or gold, or platinum recovered from his waste was a cent which he had already paid to the plate man or the paper man. It was only made money in so far as it was *saved* money. We see much in some photographic papers about the recovery of wastes, even though wastes are almost a thing of the past with many photographers; but we see little of the waste in plates or paper, which is a tenfold more serious matter than the wastes in the residue tanks.

It is a fact that a photographer's business is one of the few in which there is not a close check kept on all income and expenditure. The average storekeeper—a mere middleman—buys stock, and he sells that same stock. He knows the buying price and the selling price of things he handles, and he knows what the difference between these prices must be to pay expenses and to leave a profit. You may even hear the grocer say that paper and string cost money—this is when you are buying sugar. Too often the photographer is not a business man in the usual sense of the word. Railway millionaires send their sons to drive engines or brake freights, and wealthy storekeepers place their sons behind the counters. The photographer too seldom serves this healthy apprenticeship. It is easy, and not at all advisable, to be parsimonious; but it is easier, and almost equally inadvisable, to be extravagant. It is so very easy to expose a dozen plates on an inter-

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esting sitter when half the number would be ample. With a dozen exposures the photographer picks out the best; with half the number a greater care in posing, etc., would bring the best. And every time that care is used it tends to elevate the photographer's standard of work. I am aware that some photographers—some of the very best—do not agree with me on this point, and say that the waste is inevitable. It may well be that in their business it pays to submit a generous number of proofs, but in many poorer businesses the use of plates is careless rather than inevitable. The number of prints, too, which go into the waste-barrel is often abnormally large. Help, either careless or inefficient, is accountable for much loss.

The average photographer does not buy well. This used to be a more glaring fault than it is to-day. But how many photographers are overpersuaded by the drummer and buy a thing when it is not needed? And by overstocking in plates or paper they open the way to an excuse for wasting them.

I have not elaborated on these points, though the records of some studios would authorize strong writing. I have known studios closed up by sheer waste of material, and I have known them lumbered up by accumulation of ever-useless material. It is not easy for a man to change his methods, least of all when those methods are the result of lack of business training. But if only the man could do so, he will find (and he is numerous) that he has within his reach the means of very considerably improving his year's balance.

THE FASTEST PHOTOGRAPHIC LENS.

On other pages this week will be found an important article by Dr. Grün, of Southwick, near Brighton, in which are published for the first time details of the much-talked-of fluid lenses of his invention. We hoped to give these many months ago, but the lenses had to be duly protected by British and foreign patents, and until that was done the publication of any details of their construction was manifestly out of the question. In one sense this was unfortunate, as it has allowed unauthorized statements to go about and rumors to be circulated, which by exaggerated eulogy or condemnation might have an injurious effect upon the reputation of the instruments themselves or of their inventor.

And first let us clear up a few superficial misrepresentations. It has been complained of that all lens improvements come from Germany, and the fact that it was necessary to go to Germany to evolve this lens is bewailed. "Crummies," we may state authoritatively, "is not a Prussian." Although Grün's name suggests German extraction, he is an Englishman, was born in England, educated in England, graduated and qualified for his profession in England, and is typically English in his fine physique and passion for athletics—rowing in particular. To University College School he owes his training, and to the School Scientific Society he attributes a love of scientific investigation which relieves the monotony of an otherwise routine existence.

Another mistake that we have seen has been to the effect that the definition with the new lenses is not good. This, we take it, when it has not been inspired by interested motives, has been brought about by the examination of photographs taken to show, not the definition which the lens is capable of giving, but its possibilities in the way of rapidity. It will be noticed in the daylight picture which we reproduce (see footnote) that every rope and spar in the original shows faithfully in the reproduction, in spite of the fact that this is an enlargement of at least two diameters from the original negative.* The photographs

* Two pictures of Shoreham harbor, with shipping, 3 x 3¼ inches, one taken at midnight, November 23, 1901, lens at *f*/1.1 and one minute exposure, the other taken at midday, March 17, 1901, lens at *f*/1.1, exposure 1/200 second. The details and plans in the midday picture are perfectly defined, while the midnight picture (although not so perfect in definition) could hardly be distinguished from a daylight exposure with a hand camera. There is quite as much detail in one as in the other, the sky is equally light in both, and there is a thin stream of smoke coming from the smokestack of the steamer in the picture taken at midnight.—Ed. W. P. M.

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hitherto published have been entirely snapshots taken in theatres of rapidly-moving objects with widely differing planes, but even in these cases the definition is truly remarkable.

The employment of fluids in the construction of lenses is an old idea, both Euler in Germany and Blair in this country as long ago as the eighteenth century having designed astronomical objectives in which suitable liquids were enclosed between the glass elements. Later on, Archer, whose name is best known in connection with the invention of the collodion process, designed a fluid lens, which he styled the fluid orthoscope. One of these lenses, with the liquid still in it, is to be found in the museum of the Royal Photographic Society. It was said at the time that the liquid used by Archer was a solution of a salt of antimony, but, according to a letter in the *Journal* of the Society, in 1859, it was a mixture of nitric, sulphuric, and hydrochloric acids. If this is so, it is certainly a remarkable thing that so highly corrosive a fluid should still be preserved, sealed up, as in the case of the lens we have just referred to.

The panoramic water lens of Sutton was the only fluid lens for photographic purposes that ever achieved much notoriety. In this case pure water was used, the back and front lenses being concavo-convex, very thick, with spherical concentric curvatures. Achromatic correction in this case was obtained by making the radii of curvature in the proportions of one to two, for pure water, inclosed between glasses with an index of refraction equal to 1.57. There was a great deal of spherical aberration in this lens, which was got rid of by stopping down.

From what we have just said, it will be seen that in the case of the lenses of Dr. Grün there has been a very distinct departure from anything that has preceded them. We have had an opportunity of examining several lenses as used by him, and, while our inspection was necessarily limited to externals, the definition which these lenses yielded, contrary to what has already been stated, left nothing to be desired.

A point to which our attention was drawn by Dr. Grün is one to which reference has been made by us in these columns before, namely, that, in spite of the very large increase of aperture, there is nothing like the falling off in depth of focus which many would expect, the reason being, we believe, the fact that photographers have been in the habit of attributing to a lack of depth of focus poor definition really due to other causes.

It has been stated by Dr. Van Hoegh that with a variation in the temperature not exceeding two degrees such a lens would be rendered useless on account of the alteration in the optical properties of the fluid brought about by such a change. We can only say that in the many specimens shown us by Dr. Grün, taken under all kinds of varying conditions, and certainly under very great alterations in temperature, there is no sign of this falling off.—*Photography*.

THE PHOTOGRAPHERS' ASSOCIATION OF AMERICA.

LETTERS FROM THE OFFICERS.

In response to an unsually large number of inquiries concerning the forthcoming convention of the P. A. of A. at Buffalo, we are glad to publish the following letters from President George M. Edmondson and Secretary C. R. Reeves. Either of these officers of the Association will gladly afford any further information on request.

Editor Wilson's Photographic Magazine—My Dear Sir: It will, no doubt, interest the fraternity to know something of the policy of the present administration of the National Association, and I have been urged to outline our position, especially in regard to the educational features.

To be completely successful, a convention must not only have a good exhibit by photographers and manufacturers, but it must, in its business meetings, supply something that will be of practical benefit to photographers. Practical is just what we

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are striving to make the Convention this year.

The abolishment of prizes meets with the approval of the largest number of photographers who attend conventions, simply because it was demonstrated last year at the National, and has been demonstrated in the New England for three years, that it is the only way to meet and learn without the strife and contentions that have characterized conventions in the past. These conditions are unavoidable where medals are to be awarded.

The promiscuous manner in which medals have been handed out by the National and State Associations for the different classes of work has caused such a depreciation in their value that it is no longer considered such an honor to win as in the earlier days of associations.

The argument will be raised by some photographers that the medal will assist them in advertising their business and increasing trade. To these photographers we have only this to say: that a more permanent increase can be made to their business by studying and learning how to make better pictures. More can be learned by intelligently studying others' work and comparing it with your own than by winning a prize for the purpose of advertising.

There is no better medium for advertising a photographer than good work.

To make the meetings of assistance to the workers in the craft we will have practical talks by photographers and artists who will show how to put art and good business methods into everyday work.

Demonstrations of printing papers will be given each day by the manufacturers. On the second day there will be no meetings, as it has been set apart and will be called "Manufacturers' and Dealers' Day." There will be no business meeting to attend, and this will give photographers a splendid opportunity to thoroughly examine the materials and apparatus on exhibition.

The Souvenir will be mailed one month before the Convention, and will contain a list of all the members. The railway rates, etc., will appear in a letter from the Secretary. We intend to make the convention so practical that you will feel well repaid for sending an exhibit and attending. Sincerely,

GEORGE M. EDMONDSON,
Pres. P. A. of A.

Secretary C. R. Reeves writes:

I am pleased to report that prospects for the Convention of the Photographers' Association of America, to be held in Buffalo, August 5th to 8th, are most flattering.

By an early start the executive officers made it possible to accomplish great good already. The interest shown by manufacturers and dealers is good indication of what we may expect at the Convention.

The photographers of the country were never more enthusiastic than they are this year. It seems that everybody has the impression that the Buffalo Convention will be the best and greatest in the history of the Association, and from the interest manifested and the correspondence received, the attendance will certainly be large.

The feature of one day for the manufacturers and the dealers is creating great interest from that quarter, and the plan of making this Convention thoroughly practical, and the promise of exhibits from all the leading workmen of the country augurs well for the success of the 1902 Convention.

We have secured a railroad rate of one and one-third fare on the certificate plan. Hotels have made liberal concessions in rates, which will be appreciated by our members.

The hall is the best we have ever been able to secure in the way of light, ventilation, and size.

The Association is issuing a Souvenir Programme of about eighty pages, finely illustrated with photogravures, which will contain the names and addresses of all the members. We expect to have this ready, and will mail a copy to each member, thirty days before the Convention. This will give in detail all the information regarding the Convention.

In my next communication I will give you hotel rates and all such information that will be of interest to your readers.

Yours truly, C. R. REEVES,
Secretary.

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A SIMPLE PRINTING PROCESS.

PROFESSOR RODOLFO NAMIAS has described a very interesting and simple process in a recent issue of *Photography*. Two solutions are used, as follows:

A.—Green Ferric-ammonio Citrate .	20 grammes.
Citrate Acid	5 "
Distilled Water	50 c.c.
B.—Silver Nitrate	5 grammes.
Distilled Water	20 c.c.

These may be mixed when required for use, or will keep for a few days after mixing. The mixing is to be made up with distilled water to 100 c.c. A paper of good quality can then be coated with this solution. In my own case I applied it with a tuft of absorbent cotton, then dried it by hanging in a dark place, or, if required quickly, it may be dried before the fire. Printing should not be fully carried out, as the print gains in detail and strength in the after-process; the image is of an orange-yellow color, and the time required about the same as for ordinary print-out paper. The next step is washing in repeated changes of water to remove the iron salt. During this washing the image gains considerably in detail and changes to an unpleasant sickly yellow color, but on transferring to the fixing bath (hyposulphite of soda, 5 per cent. solution), in which it should not be allowed to remain more than two minutes, it again changes to a sepia. A final washing of ten minutes in running water is all that is necessary, and the finished print can be dried by heat, and will be found to strengthen considerably in the drying. I have, as indicated above, tried this process, and can fully verify all that Professor Namias claims for it; its only drawback seems to be a tendency to deficient half-tones. I find the tone varies considerably with different samples of paper. On a cartridge paper I obtained a fine rich brown image; on a sheet of Steinbach's I had by me one of a sepia character resulted. This method of printing is very little more expensive than the cyanotype process, and the prints are immensely preferable. It will be found very suitable for the extemporaneous production of pictorial post cards from one's own negatives, but pre-eminently applicable to the reproduction of plans, tracing, etc. The image can be toned *after* fixing in a gold and sulphocyanide bath, and the Professor states that prints so toned are extraordinarily permanent, such having been exposed without protection from air and light for three years with no sign of deterioration.

FRILLING.

THE frilling of plates during washing, after fixation, is not nearly so common as once it was, albeit a reputation for frilling, earned in by-gone days, still clings to more than one brand of plate. More than once has it been our lot to leave plates washing in running water and return to find one or more of them clear glass, while the films themselves were merrily floating around in the water. The cause of this frilling is simple. When hypo diffuses from the film into the water its place is taken by a greater bulk of water, the result being that the film swells, and, if it does not adhere very firmly to the glass it *expands*. Frilling commences first around the edges, for there the water can the easiest work in between the film and the plate. If the film is not in very firm contact with the glass the water will quickly work further and further in, the films becoming great blisters, until the whole of the expanding gelatine floats bodily from the glass. Frilling may be reduced to a minimum—practically eliminated—if one make of plate only is used, together with a more or less uniform treatment during development. But there are times when the unexpected happens. We had forgotten the existence of such a thing as frilling, and all at once we find a tendency to it in a new batch of plates just received direct from the makers.

If a film commences to frill prompt

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action is necessary; in a few seconds it may be entirely off the glass. Return the plate at once to the hypo; as the water caused the film to swell, so now the hypo will cause it to contract. The hypo does not, however, re-attach it to the glass, and when the plate is placed in the washing water the trouble will reappear. The hypo is therefore useful as an emergency treatment, until the proper remedy can be obtained. Wood alcohol is better than hypo for reducing a badly frilled film to its normal proportions. Lay the plate in a dish of the alcohol and expansion is immediately stopped. The film rapidly contracts until to its normal size, when the plate should be at once removed from the dish.

The alcohol, however, like the hypo is only a temporary salvation, and the hypo which is yet in the film cannot be washed out. The correct course, both simple and efficient, is to use either an alum or a formalin hardening bath. And as alum is the cheapest it is the usual remedy. In either case a 5 per cent. solution is a sufficient strength. The usual plan when negatives are hardened with alum is to place them in the alum after the hypo is eliminated. Where frilling demands the alum bath earlier it must be remembered that the action of the hardener renders the film less pervious to water and that, in consequence, it will need at least twice as long washing.

If a film should leave the plate—which rarely happens nowadays except when the washing water is too warm—it will be evenly enlarged and may be floated onto a larger glass plate, and adhere to it when both are raised together from the water. But it is work requiring a delicate hand. The loose, enlarged film may be shrunk to its normal size by immersion in wood alcohol. A film so treated, however, loses much of its elasticity and often stubbornly refuses to adhere to a glass. The shrinking of a film should not, therefore, be attempted except as a last resort.

A NOTE ON REDUCTION, INTENSIFICATION, Etc.

BY REV. JOHN GMEINER.

In the July, 1901, number of your Magazine, two articles interested me in a special way, one on intensification and reduction, the other on baking plates as a preventive of halation.

As to surface reduction, I have not as yet found anything better than Howard's reducer, very weak. To reduce too great intensity I prefer bleaching the negative in a weak solution of potassium bichromate, to which I add a little hydrochloric acid; to redevelop the image as far as desired with a weak hydroquinone developer, and then to develop the rest by an ordinary hypo bath.

If the image should then be too weak it may be easily intensified.

One of my three favorite intensifiers I have never seen mentioned in any American publication, and I wish to call attention to it. First bleach the image in an ordinary mercury bromide bath; then, after a short washing, darken it with silver bromide dissolved in hypo. After this a good washing is necessary to get out the hypo. This gives a clear, dense and jet black image, which seems to be as permanent as any. I find the following formula working well: Put 40 grains of silver nitrate and 40 grains of potassium bromide in an empty four-ounce bottle. Add one ounce of distilled or pure water, and shake well till all is dissolved. Then let the silver bromide settle, and decant the clear liquid. Now about two or three times wash the silver bromide by adding again about an ounce of water and shaking the bottle. After the silver bromide settles, decant the water. As some of the finest silver bromide may float away, it is well to pour the water through a funnel with absorbent cotton. The latter will retain the silver bromide particles. Then pour a strong 1 to 3 hypo solution through the funnel into the glass, which will dissolve the silver bromide. Not quite 120 grains of hypo will be required. The hypo should be added gradually, and when the finest particles of silver bromide are nearly all, but not all, dissolved, stop. The

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coarser particles will not dissolve. Finally fill up the bottle with pure water.

This darkening solution keeps well if protected from light and kept in a cool place. But gradually some black silver will precipitate and somewhat weaken the solution, but it may be used a long time.

The plate backings usually recommended have one drawback. It is necessary to wipe the backing off before development, which is a rather unpleasant job. I have experimented to find a backing which will not interfere with either the film, or the developer, or the fixing bath. I think I have found one which gives at least to me good satisfaction, as I use pyro and the fixing bath only once.

I add ordinary wheat flour to a solution of caramel, as much as I can stir in. When the whole is a black, stiff paste I add wood alcohol till the paste gets soft enough to be easily applied to the plate with a brush. Then I let the backed plate slowly drop on a properly cut paper, somewhat like that in which plates are usually packed, and the backing is finished. A number of plates may be backed at once and put in an empty plate box. Put in the plates face to face and properly cut pieces of newspaper between the backings. In this way the backings will soon dry.

After development the paper and part of the backing will soon come off, and the rest of the backing will easily come off after fixing and during the final washing.

I am greatly pleased with acetone in the developer instead of an alkali. Old plates which would otherwise fog, develop quite clear with acetone, and in general surface fog seems to be prevented by the use of acetone. I use only about one-half the quantity of acetone usually given in the formulas.

COPYING PRINTS.

Every photographer can copy a photograph and guarantee likeness, however soiled and faded the original print; but some, lacking in resource, feel in difficulties if asked to copy some old document or engraving or some picture from a book or newspaper. The need for such work is perhaps very occasional, though possibly if Mr. Tennant could be induced to stir us up with one of his inimitable papers some of us might make copying a lucrative side line. A knowledge of it is required, more because photographers are supposed to be ready to undertake any commission which the wishes or whims of customers may suggest. In Europe several firms do a lucrative business in lantern transparencies, photographing current illustrations from the weekly magazines, and selling or loaning the slides. The best way to copy an illustration from a book or magazine is to flatten it against a sheet of clear plate glass and photographing through the glass. There will not be any blurring or sign of double image due to reflection from the front of the glass. A small book may be opened and pressed against the glass, but with a larger one it should be laid horizontally open on a table, with the leaf to be copied raised. The sheet of glass is placed in front of this leaf, and behind it a sheet of glass, metal, or other stiff substance, and the two held well together by strong slips around the edges. The leaf must be absolutely vertical, and should be kept so by a stack of books or other supports behind it, and held to them so that it cannot fall forward by a string or rubber bands passing around the clips. If the picture to be copied is a very large one there may be reflections from the glass back to the camera, a sheet of black—preferably velvet—with a hole for the lens, will prevent this.

Often a stained print requires copying; it is not wise to attempt to remove the stain; it may prove successful; probably not. Or a picture or document may be so creased that it is impossible to get the folds out. If it is wished to eliminate the folds the picture must be stretched. To do this the picture must be thoroughly dampened and a narrow border of flour paste spread around its edge. It is then pasted down onto a flat board, and when the paper dries it will be as tight as a drum and every

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crease out of it. To remove it from the board, a knife run along the edge will cut it just inside, where the paste holds. If it is not advisable to mutilate the edges in this way, the print may first be backed with a sheet of paper about an inch wider all round. The whole will stretch when damp and dry taut, and the outer sheet only need be cut. A trouble with some prints on poor paper is that printing on the back shows through. If the print has no special value it may be painted over the back with black paint, when the printing will cease to trouble. If the print must not be painted it may be pasted down onto a ferrotype plate and afterward soaked off again.

TESTS OF SAMPLES OF SODIUM CARBONATE.*

BY DR. CASPAR W. MILLER.

In behalf of the Technical Committee six samples of sodium carbonate, selected at random, were titrated with the purpose of showing that when one buys this article he really can have little certainty of what he is getting for his money. The method of titration was to dissolve a carefully weighed portion in distilled water, to which solution a drop of methyl orange solution was added. Sulphuric acid, $\frac{4}{10}$ normal, was then run in until change of color occurred, when the number of cubic centimetres so used multiplied by 0.0212 gave the number of grammes of Na_2Co_3, assuming that no other alkali was present. This latter assumption was probably not perfectly correct except in the case of 1 and 2, but the fact that the solution may have contained a little sodium or calcium hydrate is of no importance from the stand-point of the photographer, since he is interested in the total alkalinity rather than in its exact form. From the amount of Na_2CO_3 so found was calculated the percentage in the sample. In no case was the latter dried, as would be done in an analysis to determine the purity of the product, since what was here desired was the alkalinity of the specimen as found in commerce, thus adhering to the conditions of photographic practice.

1. *Sodium carbonate, dry, absolutely C. P.* This was found to contain 91.3 per cent. Na_2CO_3. The other 8.7 per cent. doubtless consisted of water, not of crystallization, but absorbed from the atmosphere. Thus, according to Krauch (Pruefung der Chemischen Reagentien), dried soda readily absorbs about 10 per cent. of moisture.

2. *Sodium carbonate crystallized, C. P.* This contained 68.6 of Na_2CO_3. This sample, being crystallized, should have contained only about 37.1 per cent., or more accurately 37.06 per cent., since as ordinarily prepared the crystals have the formula $Na_2CO_3 + 10\ H_2O$. The discrepancy is to be explained by the efflorescence of the crystals, which in this case was marked.

3. *Sodium carbonate (pure granular).* Contained 50.8 per cent. Na_2CO_3.

4. *Carbonate of soda ("The Mascotte").* Also granular. Contained 84.1 per cent. Na_2CO_3.

5. *Washing soda (obtained from a grocer).* Contained 43.5 per cent. Na_2CO_3.

6. *Washing soda (from a different grocer).* Contained 50.3 per cent. Na_2CO_3.

In considering these results we must bear in mind the adherent peculiarities of the compound. For example, according to the temperature of crystallization and other conditions the crystals may contain 1, 2, 3, 5, 6, 7, 10, or 15 molecules of water, the ordinary number being 10. On the other hand, it may readily be dried so as to contain no water. In addition, as has already been said, the dried substance tends to absorb moisture from the air, while the crystals tend to give up a considerable part of their water of crystallization by the spontaneous process of efflorescence. Under such circumstances it is little wonder that the commercial product is always of uncertain composition, even if originally pure. It may be said, however, that if one select clear, transparent

* Read before the Photographic Society of Philadelphia.

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crystals, they will generally correspond more nearly to the theoretical strength than will such as have become white on the surface, the white coating being an indication of efflorescence.

On account of the importance in some developers of using the proper amount of alkali, perhaps it will not be amiss to describe for the benefit of such members as may not be familiar with chemical processes a very simple method of estimating with sufficient accuracy for the purpose the strength of any sample of sodium or potassium carbonate. In regard to the latter it may be remarked that owing to the deliquescent nature of the compound a good deal of water is usually weighed as carbonate when solutions are made up. Weigh off 5.3 grammes sodium carbonate, or 6.9 grammes potassium carbonate; dissolve in a moderate quantity of water; add a single drop of a weak solution of methyl orange, which will give the solution a pale yellow color. Normal sulphuric acid is then added until the color changes to pink. The number of cubic centimetres so added gives without any calculation the percentage of carbonate present in the substance being tested. Thus, if it requires 60 c.c. to cause the change of color, the substance contains 60 per cent. of carbonate. Of course, the most accurate way to add the acid is from a burette, but for the present purpose a small graduate of 25 c.c. capacity can be substituted, filling it two or three times if required. The normal acid can be purchased and kept indefinitely in a well-stoppered bottle, or an approximate solution can be made by mixing pure sulphuric acid and water to a strength of about 5 per cent., and then, after allowing the mixture to cool, adjusting it by small additions of water or acid so as to get a solution of the specific gravity 1029 as tested by the hydrometer.

Finally, we may make up the alkaline developing solution itself by hydrometer, and in this way avoid all question in regard to the amount of water contained in the carbonate.

This method, however, will be correct only if the carbonate be reasonably pure, any impurity except water affecting the result.

IS PHOTOGRAPHY ART? A DEBATE.

BY A. G. MARSHALL.

At midnight sharp the Paraphernalia Photographic Society was called to order in the operating-room of the Skylight Studio. It was voted to defer all other business and proceed at once to the burning question before the house. The president, an old, carved, walnut Posing Chair, who held the office by virtue of seniority and absolute neutrality on all subjects except his own pedigree and moral worth, introduced the first speaker for the affirmative and sat down in himself. The big, new Portrait Camera advanced with an easy, rolling gait, and gracefully flinging back his focusing cloth and clearing his bellows, said: "Mr. President, Fellow Apparatus, Ladies and Gentlemen: I need not remind you that we are here not of our own volition, and that though our calling is most honorable and much praise falls to our lot, yet we are in a manner slaves, and another, who comes and goes at will, reaps most of the glory and all the substantial reward of our labor. But, as we are unable to operate ourselves, we can only submit and make common cause with our master, or be relegated to the junk-shop or bargain list."

Here a little old Stereoscopic Camera on an upper shelf wiped her lenses and murmured: "He only keeps me out of sentiment, because I earned him his first dollar in the business. But I would so enjoy being taken out to see some scenery once more." "Keep still," said the smart young Telephoto, "you are cracked and leak light, and always had spherical aberration, and exaggerated your distances and blurred your foregrounds." "Well, that's better than to be all distance and no foreground. You are just full of falsity and astigmatism ——" Here the president rapped for order, and the speaker continued: "As to the question before us, we all know the

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views of our master. He holds that photography *is* art, and he is a great man in the profession. He bought me, the most expensive thing here (I state this as a fact, not boastfully) for the express purpose of demonstrating this. If photography is not art—and fine art, too—what do you call that magnificent display of portraits in the show-box on the sidewalk, in the corridor and elevator, and lining the reception-room and the whole place? What do those gold medals signify? Why do the swellest people come here? Why are our master's pictures the rage among the bon-ton? Why is he asked to address conventions and attend art and literary banquets, besides being an honorary member of the Paint and Ink Slingers and the Purple Impressionist Clubs? Because of his splendid art—art such as made Titian and Correggio, Rembrandt and Velasquez, Sargent and Whistler great—and all, I am proud to say, taken through this lens. I have seen art, real hand paintings, that nobody questions. I know the quality, wherever found. Our master's work is full of it. I have great depth, and I credit this society with the intelligence that will compel its voice overwhelmingly to affirm that photography as practised in this studio is art."

This speech was received with loud applause and some sneering and derisive laughter. The great Copying Camera spoke for the negative: "Mr. President and Fellow Members: We have been vastly entertained by the harangue to which we have just listened. As an exhibition of self-laudation and vainglory it is sublime. As a specimen of truckling to wealthy patrons and abject grovelling toadyism to the being who chances to be our boss, it is beneath contempt. My opponent advances no argument, but hiding his weakness in a glittering maze of noted names and sounding verbosity, ends a hopeless case with a dose of flattery as nauseating as that which he gives his sitters, and brazenly affronts your intelligence by begging the whole question." Here the Backgrounds and Grassmats began to hiss, and were joined by the Brushes, Combs, and Powder Puff, who had been invited in as spectators. The Developing Dishes tried to drown this with a ringing applause, assisted by a strong bubbling from the Hypo-trough through the open door of the dark-room. (The dark-room crowd had only been admitted to membership on condition of the Hypo-trough keeping his shelf and the Dishes never attending full or with even a drop inside.)

Order being restored, the speaker resumed: "No one honors our profession more than I do. Its services to the world have been incalculable. As a science it stands upon an unshakable foundation, both independently and as an indispensable assistant of all other sciences and arts. I refuse to degrade it to the mean position of tag-tail after painters. And I lament, while I despise, the highfalutin claims and false position taken by our boss merely for the sake of champagne dinners and social pull." At this point the affirmative gave a general groan, while from the toning-room the Dustpan, who was not a member, yelled "Treason! Put him out!" and was promptly squelched by a slap from the Print-washer. "Silence!" commanded the president; "this is a free debate. Let the gentleman finish." "Let the old flat-field be quick about it, too," remarked a dandy Tourist visitor, who had been leering into the hood of the coquettish Retouching-stand. "Well," said the speaker, "there seems to be an organized opposition to free speech here. But I ask you to consider what ninety-nine hundredths of photography is—simply reproduction and record of other work. Then ask yourselves if the mere aping of effects originated by painters warrants borrowing the name of 'Art' for our glorious science. My own practice is entitled to as much consideration as that of my opponent. My work for the trade really supports this establishment. I take a dozen negatives to his one, and make thousands of enlargements, all copies. His work differs from mine only in copying animated and self-conscious subjects. As I reproduce valuable paintings, I might claim my work to be art with much more propriety than our swaggering friend, with his straining after-effect. The affirmative has no basis in fact, and I am confident that your sound judgment, uninfluenced by guff, will bear me out."

After noisy applause by the developing and printing members, joined in quite

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startlingly by the Flash Gun, the 5 x 8 View Camera rose to her tripod, felt if her cap was on straight, adjusted her swing-back, and proceeded to finish for the affirmative. "Mr. President, Brothers and Sisters," she said, "while regretting the slight acidity that has developed, I maintain that by proving photography to be a beautiful science our esteemed friend has failed to show that it is not also a legitimate art when employed as a means for expressing artistic ideas. The manual technique in drawing and rendering textures that the painter must acquire is spared the photographer. But all know that technique is not art, and that some of the greatest technicians in paint are as devoid of creative skill and sympathy with the spirit of their subjects as the Copying Camera himself. I base the claim on the analysis of pictures made by my own and other lenses, that photography does afford a means for true art expression. The posing, surrounding, and lighting of a person, or the selection of a scene in an impressive aspect, and reproducing the effects in paint, is art.

Why is not the like performance, using the lens instead of the brush, also art? We must judge both the process and the result. The principles of composition are the same for all processes. Photography has its own technique, and in works justifying the art claim there is no seeking to imitate the effects peculiar to any other art. I call for the vote."

When counted, the vote proved a tie. Several Toning Baths that were expected to go negative decided from habit to remain neutral. The antiquated Head-rests and Papier-mache Pillars went with the affirmatives, hoping to regain popularity. The Ruby Lamp had gone out. The president was in a sad dilemma. For the first time in his official career he was confronted with the necessity for throwing a casting vote. Whichever way he gave it half his popularity would be gone, and at the next annual election his office would probably follow. But he was spared the awful risk. The door from the hall suddenly opened, and the Proprietor, with the Secretary of the High Art and Hock Club, stepped in on their way home from a banquet. "Well," said the Proprietor, "if that boy leaves things around like this after cleaning up he knows what to expect. I shall get here early in the morning and show him I'm onto his curves." But, though the first to enter the place next morning, the instruments and apparatus were all in their proper places, and the Proprietor concluded that the champagne must have tricked his eyes.

ASSOCIATION NEWS.

The Pennsylvania Convention.

Mr. Alfred Holden, as President of the Pennsylvania, West Virginia, Maryland, and Delaware Association, has issued the following letter regarding the forthcoming Convention:

"A Convention and Exhibition will be held under the auspices of the Photographers' Association of Pennsylvania, West Virginia, Maryland, and Delaware, at Industrial Hall, Philadelphia, Pa., July 15, 16, 17, and 18, inclusive.

"We desire to secure your co-operation, and with this end in view request that you give this your earnest consideration. For your benefit many good things will be provided. The educational features have been well considered. There will be lectures and demonstrations every day (from 9 A.M. to 4 P.M.) by the best workers in our profession, whose ability cannot be questioned. The several manufacturers and supply dealers will be represented by their demonstrators and salesmen. Their exhibits will be of such character that the very latest methods for securing the best results will be brought before you with the most modern appliances.

"The entertainment feature will not be the least inducement during this Convention, as the photographers of Philadelphia have determined to show you what they can do in providing for your comfort and pleasure. There will be an exhibition of photographic masterpieces made during the past year. This feature alone will be

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worth your consideration. In all our thoughts your needs have been studied.

"Fraternally yours,

"ALFRED HOLDEN,
"President"

The prize list is unusually full and attractive this year, and photographers should not let the opportunity pass without participation in its educational and instructive features.

The Kentucky and Tennessee Association.

The Second Anuual Convention of the Photographers of Tennessee and Kentucky will meet at Louisville, June 17th to 19th, under the leadership of Mr. W. G. Thuss. Secretary Cusich, in his letter to the fraternity, says:

"Conventions are unquestionably one of the best things to raise the standard of our profession. They bring about harmony and good fellowship with us all. It means, if you attend, you will return home a new person. The mingling together and closely observing, exchanging of ideas with brother photographers, means what? Why, new life in your work, better prices, and a sure thing to attend the next Convention."

The Indiana Convention.

The Seventh Annual Convention of the Indiana Association of Photographers will be held at Winona Lake, June 24th to 28th, The location is ideal for convention purposes, and the Executive Committee has prepared an attractive and useful programme, so that the event offers unusual advantages for instruction and pleasure combined. We hope that every one of our Indiana readers, without exception, will be present at the meetings.

The first session, June 24th, will be devoted to a general welcome and exchange of social greetings. The address of welcome will be given by the President of the Winona Assembly, and the response by Mr. C. R. Reeves. After the business session a baseball game is arranged for, with a moonlight sail on Winona Lake in the evening. The programme for June 26th opens with "angling for bass," at 6 A.M. The regular morning session will be a demonstration under the skylight at Houser's studio, and at its afternoon session a demonstration of retouching and etching; printing and toning. The Winona Association will entertain the Convention in the evening. Thursday, June 27th, will be given up to business, demonstrations, and recreations of varied kinds; and Friday will see the close of the Convention with an address on "The Studio from a Business Stand-point," by Ben Larrimer; reports from judges, and similar details.

A generous assortment of awards is offered, full particulars of which can be had from Secretary George J. Parrot, Fort Wayne, Indiana.

The Souvenir of the Convention is a tastefully printed booklet embellished with engravings from photographs by members of the Association.

Ohio-Michigan Photographers' Association.

The forthcoming Convention of this Association is to be held at Gray's Armory, Cleveland, August 27, 28, 29, 1902.

Officers: C. S. Bateham, Norwalk, O., President; A. L. Bowersox, Dayton, O., Vice-President for Ohio; F. S. Clark, Detroit, Mich., Secretary; J. F. Rentschler, Ann Arbor, Mich., Vice-President for Michigan; W. L. Smith, St. Mary's, O., Treasurer.

Classification of exhibits. Special cash prize class, open to the world, $150 in gold; $75 first prize, $50 second prize, $25 third prize. Exhibits must consist of three framed photographs, measuring 13 inches or larger. Any photographer whose dues are paid may compete in this class. Those outside of our States must pay dues of $2, thereby becoming associate members.

General exhibit. For Ohio-Michigan active members. This exhibit is for study and comparison, it being expected that every member is interested in the welfare of the Association, and will send some of his productions, thus securing the benefits which can only be obtained by comparison of his own work with that of others.

The salon. Started in the Ohio Association in 1895. All pictures by active members are eligible for salon honors. They are selected for artistic qualities and each member having one or more selected

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will receive a *Certificate of Honor* signed by art judges, testifying to artistic excellence.

Interstate exhibit. This travelling exhibit is made up of pictures from each State Association, each association being represented by one picture which has been selected as being the best exhibited at their last Convention.

Conditions and further information can be obtained from any of the officers mentioned above.

FRANK S. CLARK,
Secretary.

ABOUT VARNISHING.

THE varnishing of negatives is a custom which in America is more honored in the breach than in the observance. Varnishing is one of the things which was more necessary in collodion days than it is today, and so it has gradually fallen out of fashion. The chief uses of varnish were two: First, it protected the rather delicate collodion film from scratches and similar injuries, and, second, it protected from chemical dangers, both from active staining and from the slower and more insidious effects of the action of time. The gelatine negative is sufficiently tough to stand a wonderful amount of careless handling, but it is still liable to stains, especially silver stains.

Gelatine, as everyone knows, will absorb moisture, not only when it is placed to soak in a dish, but whenever there is dampness in the air. There are more or less free silver salts in many printing papers, and this free silver will stick to moisture. Hence, when a negative which is not bone dry is set to print there is always a liability to silver staining, sufficiently pronounced to spoil the negative. In England and some other European countries, where they encounter fogs and other atmospheric conditions more artistic than comfortable, we believe that the varnishing of negatives is common. It certainly is a good plan, even in parts of this country, to varnish any negatives which are likely to have any permanent value. There are many varnishes on the market, and the formulæ are legion. The one which I use is made by dissolving six ounces of best white hard varnish (which I get from a paint store) in ten ounces of alcohol. The base of them all (for some are compounded of several ingredients) is some hard varnish dissolved in alcohol. In all instructions for varnishing the direction is to "well warm the plate before applying." Unfortunately, they too often neglect to add that the negative must be allowed to cool again before the varnish is flowed on. If the varnish is applied when the film is still hot, the alcohol in it evaporates too quickly, and the varnish sets in ridges. The heating of the plate is merely to insure that it is quite dry. It should then be allowed to almost cool. The plate must be dry or the varnish may look milky—not to mention other possible ills; and it must be allowed to cool, or the varnish will prove troublesome in its flow. The varnishing itself is a matter of "knack." Little can be said about doing this beyond giving the usual instructions, adding that the movements must be continuous, neither hurried nor halting, or ridges may result. Hold the plate by its left lower corner in the left hand and pour a liberal supply of varnish onto the centre of the plate; tilt the plate so that the varnish flows diagonally across it toward the far right-hand corner; then backward across the top of the plate to the upper left-hand corner. The whole of the upper half of the film is now coated; tilt the plate to bring the flow toward the thumb, and just before it can touch the thumb tilt the plate toward the lower right-hand corner. This last sweep should cover all the uncovered portion of the plate, and the varnish can then be flowed from the lower right-hand corner back into a bottle. After one or two attempts an even flow will be attained. The plate should be stood on edge, with its lower edge resting on a piece of blotting-paper to dry. In a few minutes it will have set, with a smooth, even surface. The remaining solvent or solvents must be driven off by heating the negative rather hotter than the hand can bear, when the film will set very hard and brilliant.

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Varnish poured onto a dry, slightly-warmed negative seems to almost form a part of the film itself, rather than a mere coating. Probably the pores of the film open and the varnish penetrates into them, forming a very close alliance.

CHIPS FROM A PHOTOGRAPHER'S WORKSHOP.

Colored Positives. An interesting use for spoilt negatives is that suggested some time ago by Professor Namias. Old, useless negatives are entirely freed from silver by a hypo ferridcyanide reduced. The plate is then thoroughly washed, and sensitized in a 4 per cent. solution of potassium bichromate, and dried. Printing is under a transparency (not a negative). This, of course, renders the highlights non-absorbent, so that after printing, the plate being put in a solution will take up the solution and a colored pigment which may be mixed with it, into its shadows or previous parts. Professor Namias gave the following solutions, of a 5 per cent. strength: Barium chloride followed by sodium sulphate gives white. Potassium ferrocyanide following uranium nitrate gives dark red, following copper sulphate it gives bright red, and following ferric chloride it gives blue. Sodium sulphide following lead acetate gives black; and following cadmium chloride it gives yellow. Between immersion in the first and second solutions the plate is well rinsed.

Idle Cameras. Some time ago Dr. Wilson told us "how to make that idle camera pay." It is very certain that many of us have idle cameras. Those old pictures which were given us in the March number made me take down the volumes of THE PHILADELPHIA PHOTOGRAPHER of the 70's and look over those fine old supplements which young men call quaint or back-numbers. I was turning over the pages of a volume and my eye caught a line by L. B. Clench about an idle camera. I have done just as he did, for he says he bought his first 4 x 4 camera in a dull season and left it in a corner of the gallery to collect dust. One day he tried to figure out what dividend it was returning to him, and the figures looked sick. So he got out his camera and dusted it and took 4 x 4 pictures on spec, of customers who came for cards. He found that in a few months the big camera was well employed. If it had been left till some *asked* for a 4 x 4, why by that time it might have grown rusty.

He says: "I think if those who complain of dull business would get out the big camera or any other camera lying idle for want of use, and put it to work they would soon have plenty for it to do. Try for a month putting up a card in your workroom headed speculation work, and on it put amount of moneys received for such work. Make negatives of all likely subjects you can get hold of; ask them on the street or wherever you find them to come in and give you a sitting, for you want to get out some new styles."

Brother Clench was right in his idea; perhaps we should do it differently now; but the fact is the same, that the idle camera will pay, if only it is *made* to pay. —J. W. E.

Pinholes. Every season has its own advantages and drawbacks, and with the advent of warm, dry weather dust appears to worry many of us. Dust is not the torment that it was thirty years ago, for in wet collodion work a speck of dust in the flowing collodion often meant a streak the length of the plate; in dry plate work it means only a clear spot where the dust has shielded the negative from the light. But dust is sufficiently annoying to be guarded against, and a few simple precautions will very considerably help to minimize it. Many photographers brush their plates, but these are generally free from any suspicion of dust when packed by the makers, and seldom require dusting unless they have been handled—as for backing—after the boxes have been opened. The insides of the camera and of the slides seem to often harbor much dust, and to be seldom cleaned. Rack the camera out to its fullest extremity, and go carefully and thoroughly over the interior with a slightly damp

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cloth. Wipe out the slides, too, and occasionally with a fine hard brush clean out the grooves. A little prevention and removal of dust will soon cure pinholes. Where pinholes do occur in negatives (they are not invariably caused by dust) they are often treated to *over*-retouching. A pinhole seen through a negative and against the light looks bigger and more important than it really is, and than it will show in a print. Many of the smaller pinholes, if occurring among hair, clothes, or dark materials, will not show in the print, whereas if it is attempted to block them out in the negative this blocking out may itself print as a defect.

Individuality. Be original, be unique, if you can, but not out of harmony. Individuality goes wrong when it is out of harmony with its surroundings. Eccentricity is very easy, but it does not last. It is open to the meanest capacity, and is often assumed by it; but genius, to be useful, should consist of individuality, backed up by suitability to its environments.—H. P. ROBINSON.

The Man Behind the Gun. Up to a certain point, and in the hands of 90 per cent. of the followers of the art who are not artists, the photograph is in the process, but with the others the picture is in the man (as in painting, only in a less degree, and as far as the materials will allow). The process takes a very subordinate place, and is dominated by the taste, thought and feeling of the artist, when an artist uses it with what may be fairly called emotional results.—H. P. ROBINSON.

Home-made and Tinted Mounts. A Hint by Alfred Watkins: Rough or hot-pressed drawing paper is a very suitable surface for mounts, but a pure white surface is not always suitable. I tried an infusion of coffee for tinting these mounts, but for my purpose the color was too bright and obtrusive. I wanted to introduce a little gray into the brown, and for this purpose tried the addition of a little common writing-ink with success. A useful stone color is the result, tending toward brown or gray, according to the amount of ink added. My method has been to sponge over the mount with the solution, taking care that the sponge is not overcharged, and that an even surface moisture results. If the tint is not deep enough the process may be repeated after drying. The iron in the mixture may be objectionable for tinting the photograph itself, but it cannot harm if used for cut-out mounts. Some care and experiment is necessary to get a suitable mixture, which should be filtered before use. A very few drops of ink are sufficient.

EDITOR'S TABLE.

MR. W. I. SCANDLIN, who has so acceptably edited *Anthony's Photographic Bulletin*, *The International Annual*, and other publications for the past few years, has resigned his position with the ANTHONY & SCOVILL CO. to engage in business on his own account. The new enterprise to be established by Mr. SCANDLIN, viz., A Bureau of Business and Technical Information for Photographers, is one for which he is peculiarly fitted by his wide experience, and we bespeak for him the kindly consideration of our readers. As his announcement on another page tells, he will devote himself to the preparation of plans, methods, and publicity material for the aid of photographers desirous of increasing their volume of trade. There is great need of expert service of this sort, and we know of no one better equipped to advise in such details than MR. SCANDLIN.

By his capable management of the publications given into his charge our confrère has not only increased the esteem in which the *Bulletin* and the *International Annual* are held in the photographic world, but has also won a host of friends in the fraternity who will surely lend their friendly support to his new activities. A booklet of information can be had by addressing W. I. SCANDLIN, 346 Sixth Ave., Brooklyn, N. Y.

THE Twentieth Century Finisher, introduced by the DORTICUS MANUFACTURING CO., 38 East 20th St., is one of the most useful work-room conveniences we have seen. Outwardly it is a compact burnisher, but by a patent device the steel burnishing roller is interchangeable with other rollers. One of these will give a half-tone finish to portraits, softening and en-

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hancing the effect wonderfully. Another roller gives a silk finish, the effect being variable according to the amount of pressure applied. We urge our readers to get the descriptive circular issued by the manufacturers and see for themselves the many-sided usefulness of the machine.

A NEW COMPANY ON AN OLD FOUNDATION.—JOHN CARBUTT, Wayne Junction, pioneer dry-plate maker of America (1878), and the first to introduce nearly every variety of plates and films now on the market, has recently transformed his business into a corporation with his two sons, JOHN E. CARBUTT and ROBERT F. CARBUTT, under the title of "The Carbutt Dry-Plate and Film Company, of Philadelphia." Officers: JOHN CARBUTT, President; J. E. CARBUTT, Vice-President and Treasurer; ROBERT F. CARBUTT, Secretary. Capital stock, $150,000, full-paid and non-assessable. The company will continue the manufacture of the various photographic products introduced by Mr. CARBUTT, especially those pertaining to three-color photography and his now famous vinco developing paper.

Having followed the development of this enterprise since its inception, we note this latest move with pride and satisfaction. Our best good wishes go out to the new firm on the old and true foundation. May many years of prosperity attend it.

THE TIMES-BULLETIN.—Owing to the consolidation of Messrs. E. & H. T. ANTHONY and the SCOVILL & ADAMS CO., *The Photographic Times* and *Anthony's Photographic Bulletin* will, beginning with the May issue, be published as one magazine, under the title *The Photographic Times-Bulletin*. Many important changes and improvements will be made very shortly. The subscription price will remain the same as for the *Photographic Times*—*i. e*, $2 per year. The combined journal will be edited by Mr. WALTER E. WOODBURY, who has our best wishes for his success.

THE services of Mr. DOUGLAS A. BROWN have been secured as official stenographer of the P. A. of A. Convention at Buffalo in August. We congratulate all concerned on this wise selection. Mr. BROWN has abundantly shown his ability in reporting the past two or three conventions, and the next meeting is safe in his hands.

WE have received from the C. P. GOERZ OPTICAL WORKS, of this city, the stenographer's minutes of the inquiry before the Board of United States Appraisers regarding the appraisement of lenses imported by C. P. GOERZ.

At this inquiry the majority of those interested in the manufacture and sale of lenses in America were called to give testimony. The report is somewhat lengthy, covering 89 closely printed pages, and its details are extremely interesting. Among other things apparent from a careful reading, it is evident that the splendid performances of the Goerz Double Anastigmat are the result of scrupulously careful workmanship throughout its manufacture. The methods adopted by the firm of C. P. GOERZ in the testing and centring of their objectives was plainly shown to be in advance of the methods used in some of the other factories. Altogether C. P. GOERZ is to be congratulated upon the result of this unsought inquiry into his business, and we commend those interested in the manufacture of lenses to a perusal of this interesting document.

JOHN A. HENK, the progressive photographer of Mt. Clemens, Mich., sends a little folder concerning his business which has many commendable points. Mr. HENK offers his patrons portraits, views, and groups in aristo, platino, platinum, and carbon, and the announcement shows his facilities to be well up to date.

THE new trial size of Marshall's Electric Light Water Colors has met with great favor, and the manufacturer has had to increase his facilities to meet the larger demand. These colors are the best we know of for coloring slides, photographs, and engravings, and are generally known as "Color Pearls." Several demonstrations in their use have been given in our city of late, and those who attended were surprised to note how easily and certainly the use of Color Pearls secured the most desirable effects. Send to Mr. A. G. MARSHALL, 625 Vanderbilt Ave., Brooklyn, N. Y.

AMONG the tasteful novelties displayed in *Collins' Trade News*, just to hand, special attention should be called to the Blaketto B, Averno B, and Aurelia E card mounts. For high-class work these three cards are peculiarly appropriate, and the progressive portraitist should not overlook them. *Collins' Trade News* can be had free on application to the A. M. COLLINS MANUFACTURING CO., Philadelphia, Pa.

THAT useful little manual on *Negative Making*, published for free distribution by the HAMMER DRY-PLATE CO., St. Louis, is evidently appreciated, as it deserves to be. A copy of the sixth edition has just reached our table. If any reader of these pages has not yet seen the book we would advise the sending of a post-card as above. We value our copy, and have it always at hand for ready reference.

ANOTHER capital little book which every photographer should read and re-read is *Practical Chemistry for Photographers*, written by that able photo-chemist, MILTON B. PUNNETT, and sent to all who ask for it by the STANDARD DRY-PLATE CO., Lewiston, Me. It is full of common-sense information on the daily difficulties, and tells its story so plainly that no one can mistake its meaning.

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PORTRAIT

By Sarony, Scarborough, England

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WILSON'S PHOTOGRAPHIC MAGAZINE.

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PHOTOGRAPHIC PERMANENCE AND THE AMATEUR PHOTOGRAPHIC EXCHANGE CLUB—1860-64.*

BY PROFESSOR CHARLES F. HIMES, PH.D., LL.D.

WITH the very first experiment in photography the question as to permanence of results arose. The process of Wedgewood and Davy failed in practical results, mainly because the pictures were permanent only when examined by artificial light, and even then deteriorated. The question "How long will it keep?" has been running all through the literature of photography to the present time, and to-day, owing to the wide range in the applications of photography, it is continually recurring in regard to the preparations used, but more especially, in view of the growing application for record purposes, in regard to the final product, the finished print. The question as to the keeping qualities of any of the preparations used in any of the stages of the photographic practice toward the finished print is a very secondary one, except in so far as it may affect the permanence of the print. Whether developers will keep, matters, upon the whole, very little. Their very efficiency depends, in fact, upon their chemical instability. It is only a question of a little more or less trouble, and perhaps a little more expense. So, in regard to fixing solutions, where instability may have graver consequences to the finished print, there need be no room for question, because they can be placed above suspicion by fresh preparation. But how long negative plates or films will keep in good condition before exposure in the camera, and under what conditions, is not simply a question of convenience or expense, but of applicability of photography where considerable time must necessarily intervene between their preparation and use, as upon scientific and other expeditions. Closely related to this is the other question, as to the length of time allowable after exposure before development. These questions are, however, of importance practically only between comparatively narrow limits. An answer to the question as to the years that dry plates will keep in good photographic condition, or whether they will keep indefinitely, has, however, some interest as affording an *à fortiori* argument for belief in and demand for plates that may keep in good condition for any particular purpose. But it is when we come to the print, as has been said, the question assumes its highest importance, a dominant character. All consideration of the photomechanical print may be omitted in this connection. It has a utility and permanence all its own; but as it is necessarily not strictly photographic, but one remove from the photograph, if it lacks some of the record qualities, especially of minute microscopic rendering of details, it fails, it might be said, in original entry quality of the photograph.

It is not proposed this evening to traverse this question of photographic permanence exhaustively, or to discuss it by means of facts independently and scientifically established, but rather as a question to be

* Read before the Photographic Section of the Franklin Institute and reprinted from the *Journal*.

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determined empirically by means of data of the highest character for authenticity, furnished by one of the earliest photographic organizations—the Amateur Photographic Exchange Club, from 1860 to 1864, composed of men of careful habits of systematic work and observation, many of high scientific attainments.

As preliminary, it may be well to fix definitely what is meant by time-effect in this connection. Time is recognized as so necessary a factor that it has almost come to be regarded as capable *per se* of producing changes, or that some things will change, perhaps all things deteriorate, simply with lapse of time. Now a time-effect *per se* is inconceivable, and we are justified in any case of what, for convenience, may be called photographic change, in looking for some cause as fully as we are justified in mechanics in assuming a cause where a body changes its state of rest, or of uniform motion in a straight line. These causes of change in sensitive films and other photographic preparations may be internal or external, or a combination of both. They may be minute, feeble, operating slowly, but with cumulative effect through a very long time. There may be in some cases molecular movements in a sensitive film that will gradually change its photographic character. There are many analogies, physical and chemical, to suggest it. In a supersaturated solution of a salt crystallization may take place rapidly, but gradually enough to be watched, and just as such crystallization can be started by an external mechanical impulse, so it is conceivable, external causes, changes of temperature, vibrations of all kinds, even jarring of floors and buildings, may assist, even if they do not originate, molecular changes that may affect the whole photographic character of a film.

Perhaps a more analogous case is that of the slow crystallization of axles, wheels, bolts, cannon, and so forth by jarring. We are familiar, too, with what is called the "continuating action" of light, and it is a question whether sufficient allowance has been made for this fact in accounting for deterioration of films and papers exposed even to a very feeble light during preparation in drying. Experiments made upon papers, though not as decisive as could be wished, seemed to substantiate this view. Again, well-defined chemical reactions, as experience in the laboratory shows, require time, and in many cases prolonged time, for perceptible result, and such may be taking place slowly in a sensitive film, and eventually affect decidedly its character. When, further, all that is covered by the term atmospheric conditions, normal and abnormal, is taken into consideration, we have a legion of possible agents operating to change photographic preparations and products. Now, the fact to be recognized is that all these conditions are matters of observation and investigation, and in many cases may be eliminated or neutralized, as the great advance in certainty and keeping qualities of plates and papers in the past few years shows.

In investigation of such conditions a natural tendency to give, perhaps, undue weight to established chemical reactions may cause minute subtle conditions to be overlooked, accompanied by a conscious or unconscious assumption that highly sensitive photographic compounds are in their very nature sensitive to other physical and chemical agencies than light; that they are, in short, in their nature wanting in permanence, in spite of the fact that silver chloride, bromide, and iodide are among the most stable chemical compounds, so far as other agencies than light are concerned. An over-caution resulting from this want of faith in photographic preparations often manifests itself in *à priori* conclusions, and positive, scarcely tested statements, and a time-limit has been fixed entirely unwarranted, and once fixed is apt to maintain its place. As a little illustration, it was stated by someone that blue-print sensitizing solution would not keep; it became permanently incorporated in photographic literature, and there it remains in spite of published statements, again and again, that it will keep unimpaired for years, and many may be deterred from its use by this positive charge of instability. Time has in very many cases, then, doubtless, been made the scapegoat for many avoidable causes of photographic deterioration, for imperfect knowledge or oversight of conditions, for unscientific or careless work, for improper treatment, and storage, etc. The survival of one specimen in ex-

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cellent condition is sufficient to establish permanence of any method, and direct investigation to the causes of deterioration, with certainty of success in discovering and combating.

Considerations such as these suggested that the objective presentation this evening simply of some well-authenticated facts in this connection might not be without general interest, and at the same time recall some of the pioneer workers of your city. As to the keeping qualities of gelatino-bromide plates, it may be well to recall a partial report made at a previous meeting of this section. Reports upon this point have been exclusively made upon plates that have remained unused by accident, and not upon those carefully tested and deliberately placed aside for this purpose. One or two failures with plates kept longer than usual, ascribed to their age, served to fix a time-limit beyond which others were not permitted to go before use, and unused ones would not be likely to receive much care. Unopened dozen boxes out of gross boxes of plates, by Cramer, Inglis, and Eastman, in my possession since 1884, were furnished to this section and to the Philadelphia Photographic Society to be tested. Plates from the same lot had been tested at different intervals since that date by myself and others. The results were generally as satisfactory as with the plates originally. The plates at that time had not the rapidity of plates subsequently prepared, and it is not possible to say positively whether there was any loss of sensitiveness with age, but there did not seem to be.

According to a report made by Mr. M. I. Wilbert to this section, with the accompanying negatives upon the Cramer plates exhibited here, they seem to have been in as good condition as when first received, fourteen years before. By a singular coincidence, illustrative of what has been stated, while these old plates were establishing the permanent excellence of the Cramer plates, that maker was advertising the innovation of affixing to packages of all plates sold the time-limit within which they would be guaranteed, and there was expectation on the part of some that this lead would be followed by other makers. But the advertisement has disappeared. An interesting report upon plates submitted to the Philadelphia Photographic Society by its technical committee is published in its proceedings,* with full discussion, including the effect of mode of packing the plates. While the lot of plates at their disposal seemed to manifest a greater tendency to fog, this may have been due in part to shorter exposure and energetic development, as the plates, although the most rapid of that date, were not as sensitive as those of to-day. These plates at the time they were submitted were, with reason, believed to be the oldest authenticated non-exposed plates, and are, probably, of gelatino-bromide plates; but in the course of the evening, in connection with other matters pertaining to the club already alluded to, prints will be laid before you from negatives made upon plates so much older before exposure that the importance of the preceding ones will be reduced.

A word in regard to the origin and character of the club will serve to show the basis of reliability for data furnished by it. Its history, carefully written by Coleman Sellers, now Doctor, was published several years ago,† and it will not be necessary, therefore, to go into details as fully as might be otherwise desirable. It originated in a desire on the part of some amateurs to obtain copies of a peculiarly good stereograph of a "cattle picture," taken by Robert Shriver, of Cumberland, Md., without actually begging the pictures. They proposed, therefore, to exchange pictures of their own for them. At the suggestion of H. T. Anthony, not then a member of the firm, but an enthusiastic amateur, a club was formed, limited to twenty, without formal constitution or regularly elected officers, or form of election of members, all matters being regulated by correspondence and common consent, with most perfect harmony. Among the rules were the following:

"1. None but amateurs in the art shall be recognized as members, and the number shall not exceed twenty.

* Journal of Photographic Society of Philadelphia, vol. v., No. 6.

† Anthony's Photographic Bulletin, 1888.

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"2. No member shall forward for exchange any work not his own.

"3. Every member shall forward each other member on or before the 15th of January, March, May, July, September, and November at least one stereoscopic print, a copy of which has not been sent before, or its equivalent mounted and finished.

"4. Should any members desire to exchange with any others oftener than bi-monthly, they can do so by agreement.

"5. Anyone failing to send one print bi-monthly shall be struck from the book of the party he so fails to send to, unless satisfactory reason is given for his default.

"6. All photographs must be properly labeled with a descriptive name, the name of the artist and the date of the printing, and they must be guaranteed not to fade for two years; and if toned by experimental process, must be marked 'Experiment.'

"7. Two unmounted prints shall be equivalent to one mounted and finished of the same size. Two-card or quarter-plate shall be equivalent to one stereoscopic, and two stereoscopic to one whole plate."

Among the members were H. T. Anthony, Lewis M. Rutherfurd, the astronomical photographer; F. F. Thompson, of Wall Street; Augustus Wetmore, C. Wager Hull, John M. Masterton, Professor O. N. Rood, the eminent physicist; Professor Emerson, of Troy; in Philadelphia, Constant Guillou, Coleman Sellers, F. T. Fassitt, S. Fisher Corlies, Professor Fairman Rogers, E. Borda, Dickerson Sargent; in Washington, Titian R. Peale and Rev. Dr. Charles Hall; in Pittsburg, Captain T. J. Brereton; in Cumberland, Md., Robert Shriver; in Boston, Dr. John Dean, and in Baltimore, George B. Coale, and others, perhaps, in the later years, as the rule in regard to numbers readily relaxed to admit a desirable additional member. The exchange prints in possession of each of the members of that club constitute unique collections in the character and variety of the subjects and workers, and are perhaps the best authenticated prints of that date, with reliable data on many desired points. The specimens presented for your inspection were taken almost at random from my own collection. They will be found generally in most excellent condition, showing no more the effect of time than a collection of engravings might do. They have been kept, not with very special care, in pasteboard boxes, and have been handled in use as stereographs perhaps more freely than ordinary photographs.

Professor O. N. Rood, for many years of Columbia University, New York, writes: "A short time ago I examined all my old photographic prints and found them in perfect order; I also examined the prints received from members of our club; they were as good as new. But I have photographic portraits of Dr. John Torry, the chemist, and of Dr. B. A. Gould and others, that have nearly faded out, though not nearly so old as ours."

Robert Shriver, President of the First National Bank, Cumberland, Md., reports his, so far as yet in his possession, in good condition, exceptions due to bad washings and hypo. Dr. Coleman Sellers states, "A great many of these are in an excellent state of preservation, running uniformly through the work of the various members of the club, and they have not been given any special care other than that they have been kept in separate cases and labeled, the cases being open at one end."

F. T. Fassitt reports that prints on albumen paper afford greatest claim for permanency. Prints made of the Sanitary Fair, 1864, hung exposed to changes of light and weather in his library since then, have retained all their brilliancy without the least sign of deterioration.

But there was a great deal done by members of the club, outside of the rules and simple exchange of prints, in way of the exchange of ideas and experience, with permanent results in some cases upon photographic practice. Thus alkaline development of dry plates was first suggested by Borda in place of the universally practised acid development. The great problem of that day was the production of a dry-plate process that would equal in rapidity and results the collodion wet-plate process, and require the minimum of trouble in practice. The virtues of beer, solid milk, albumen, tannin, and many other substances were tested and reported upon. The tannin process seemed to be the survival of the fittest. In this connection Borda also suggested warm development. Many of the

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prints exhibited are from tannin negatives, and the negatives and stereographs on glass by that process show its possibilities. It is exceedingly simple and certain, and, according to a method contributed by myself, plates can be prepared up to the last stage of flowing with a solution of tannin—fifteen grains to an ounce of water—in broad daylight. But a far more interesting fact, just put in my possession, bearing on photographic permanency, are the prints, here exhibited, from tannin negatives, on plates prepared in 1863 and exposed in 1898. The plates made by him, Mr. Shriver writes, "had been hid away in an outer room, where they were subjected to extremes of heat and cold, but were kept perfectly dry. They come up in development as good as I could have expected if the exposure had been made in 1863, instead of thirty-five years later." The prints exhibited will be found to compare favorably with those from the best gelatine dry plates of to-day. He adds very pertinently: "Here, then, was an answer to the query, 'How long will dry plates keep?' Good for thirty-five years, and perhaps indefinitely, if made by the 'tannin' process." Apropos at this point is an interesting experience of Dr. Coleman Sellers in regard to the permanence of the impression in the camera before development. A dozen tannin plates furnished by him to a friend were returned in three weeks as exposed. After several had given no results upon development, he re-exposed one of the plates and obtained an excellent negative. From a series of experiments subsequently made he concluded that between the time of exposure and development every day that intervened diminished the chance of success. He regards the effect of exposure "as a strain put upon the parts of the film according to the intensity of the light that fell upon each particular moment of surface, but this strain would gradually be relaxed if not fixed by an immediate development, and there was no chemical action on the plate, but mere physical action that was temporary in its character." To return to the club prints—and among these are included some by Joseph M. Wilson, of the same period—they will be found to be exclusively on albumen paper, and, except when marked "experimental," as a rule toned in an alkaline gold bath, and fixed in a separate bath. The paper in many, perhaps most, cases was albumenized by the members themselves, as commercial albumen paper in early days was not as uniform in quality as at present, and poor prints were apt to be attributed to the paper, and often with right. Many of the members of the club had the advantage, several years before its publication, of one of the greatest improvements in albumen printing imparted to them by H. T. Anthony, namely, the fuming of the well-dried sensitized paper with ammonia. It eliminated many sources of failure. Considerable variety of tone and of surface is observable in the prints: some are somewhat discolored, but few more so than a collection of engravings under the same circumstances would exhibit, while very few show symptoms of fading, and in slight degree. The print of the full moon, by Rutherfurd, it will be noticed, shows no discoloration or change of any kind, while the white mount has very perceptibly discolored.

It has hung, framed, in a well-lighted room for years. In some prints little specks of mould appear upon the face, which can be rubbed off without apparent injury to the print. This seems to originate in the paste, as the labels on the back in some cases show the same effect, even when the prints are free from it. The mould does not necessarily involve the albumen of the print. The portrait shown, which hung upon a damp wall, was half of it loosened from the mount by a mass of mould, and yet, at present, scarcely shows the outline of it, after being soaked off from the mount and thoroughly washed. In the selection, readily made, from a collection of commercial prints of the same date as those of the club, many will be seen to have almost faded out of sight, among them some by makers justly of highest reputation, as Langenheim, of Philadelphia. These might be explained as toned with the old combined bath before its bad character had been established. Of the foreign views the French have deteriorated most; and the Italian, of which least was expected at the time, show less change; and the English and German are,

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as a rule, well preserved. The collection shows that albumenized paper can be made to yield results not only unsurpassed in beauty of tone and rendering of the best qualities of the best negatives, but, with proper care in the production, unchanged after forty years, and promise of remaining so for forty years to come. A first-class albumen print may then, indeed, at present be regarded as the standard of permanence, not on *à priori* ground, but as an experimental fact. The departures from permanence exhibited may be explained in many cases by the defects and uncertainties of the process at that early period, now eliminated, and in other cases by the want of care at all stages, especially in toning and washing. The uniformly high permanence of the club prints may be attributed to the character of the workers, their extreme care in manipulation and in the processes employed, and the limited number of prints made at a time, which made greater care possible. There is no argument in this for a return to albumen paper, but surely a suggestion, that for record purposes albumen prints might well be included with those of platinum and carbon, which are so generally exclusively recommended or demanded. The practical lesson of the prints is that permanence is perhaps not so much a matter of process as of conscientious care in carrying out the conditions necessary for permanence with any process. Even the blue-print process, in the specimens here exhibited, that have been exposed to light and many conditions unfavorable to permanence, compares favorably with the best processes in this respect, while the platinum prints, with pure whites, when made about twenty years ago, show discoloration, due most likely to the paper. This simply shows that it is unsafe to argue too far on *à priori* grounds from the permanence of platinum as a metal to the permanence of prints based upon it, where so many complex conditions are involved, conditions still matter of discussion by Chapman Jones, Haddon, Jacoby, and others, in explanation of admitted deterioration of platinum prints in some cases. The duplication of prints for record purposes by several of the most approved processes, made by persons of established character for conscientious care in printing, with a record of the essential details of the process employed in each case, might contribute something to the character of the record.

The albumen process, as the prints show, has no superior for photographic expression, rendering all the good qualities of a negative. It is a perfected process: simple, easy, not more troublesome than any printing-out paper, and, with little practice, certain in its results. Its fine surface is not easily abraded, and it permits warm solutions and warm water at all stages with out the least risk of injury. The paper ready for sensitizing is a commercial article of uniformly excellent quality. It is without offensive gloss. Matt and glossy albumen papers, ready sensitized and of good keeping qualities, have been recently advertised by a German firm, and have been commented on favorably for certainty and excellence of results, said not to be distinguishable from those of platinum. The demand for albumen paper in this country, according to a reliable estimate, is only about 5 per cent. of that of ten years ago. Its use is confined to those who still demand it, and to cheap commercial work on a large scale, especially in stereographic work.

The loss of popularity is due in part to the requirement of negatives of the highest class, and in a measure adapted to it. Negatives that might yield very valuable prints with some of the more recent papers would be absolutely worthless with albumen paper. The developing papers, too, permit practice of photography by many who would otherwise not find time to indulge in it, and economize time for the professional. It is in connection with record work, however, that albumen paper has some claim to be considered.

A correspondent writes he is bothered with a brown staining of his negatives when attempting to reduce them by agfa. This is, fortunately, very easily remedied, for the trouble is caused merely by the use of impure or hard—probably hard—water. The stain, where it has occurred, can be removed by placing the plate in a weak alum solution, acidified with oxalic acid. Future stain may be prevented by using filtered rain or distilled water.

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PHOTOGRAPHING DOGS.

BY GEORGE OLIVER.

We have witnessed quite a plethora of "natural history" photography within the last year or so. Messrs. Carlin, Dugdale, Brownell and several others on this side, and the Keartons in Britain have almost suddenly created a popular magazine interest in this fascinating branch of work, and must have forever killed the old woodcuts or half-tones from sketches which were all-sufficient a few years ago. This class of work is by no means new. I have a few photographs of birds which date some thirty years back, and which came from the north of England; and the work of Wallihan and Gambier Bolton, among others, has long been known to discerning people and to a certain extent to others. It is one of the branches of photography in which the pioneer work was done by the professional, and it is of a professional line of work that I speak now.

In certain sporting or training districts the photographing of animals should prove as important an adjunct to the business as does the photographing of students in some college towns. For a long time I have made quite a specialty of dogs, being rather fortunately situated in a district where there are not only many bird dogs, but where, in addition, many lady summer visitors bring their pet dogs. The work divides itself into three classes: first, the photographing of sitters, accompanied by their pet dogs; second, the photographing of the dogs alone in the studio or in the garden attached to it; and last, the work in the open field.

In studio work of the first class I find ladies the easiest to take, but the hardest to please. A lady, more often than not, has a small dog which she is fond of holding on her knee, or even in her arms. She is usually taken sitting, and the dog, being quite at home in its position, will, before many minutes are past, remain quiet sufficiently long for an exposure. A noiseless shutter works inside the camera, and I use all the light there is, with a big aperture and rapid plates, so that the exposure is reduced to a fraction of a second. A pet dog will sit up more or less alertly on a word from its mistress or from the photographer, and photographs in which both face the camera, the one smiling and the other alert, seem to be the most popular. With difficult dogs much patience is necessary, but I can always get them, sooner or later, while their mistresses are talking to them. These are the pictures which more often please the friend of the sitter than the sitter herself, and they lead to a number of resittings. But I, a few years ago, adopted the rule of giving resittings without a special charge, and, taking one customer with another, I think the work pays well on this plan. With men I usually let them stand, with the dog at one side, and this is not easy work, for the dog is nearer the edge than the centre of the plate, and it often means more than a little work before the dog can be got in sharp focus and remain there long enough for an exposure.

Right here let me say that it is no use trying to photograph dogs unless you were born a friend of them. If you think that dogs are just ugly brutes, you will have about as much success as a surly misanthrope would have if he tried to photograph children—dogs know. With a love for dogs you have the right qualification, but a knowledge of dogs is also necessary, so that "points," etc., may be intelligently and even enthusiastically talked about. The reason I succeed with difficult dogs is, I think, because it never occurs to me that I am "exercising patience," or living up to any other school-room maxim; I am simply interested in the effort.

For photographing dogs without their owners I have in the studio a tall table, three feet six inches high, the top of which has been thickly coated with warm glue and then sprinkled with coarse sand. A board, similarly coated, hangs in front to hide the legs of the table. A plain screen, either lighter or darker as best suits the dog, is hung behind. The dog stands on this table. If the dog wears a collar or is used to the leash I let his master hold him, but remove the chain or strap and use instead a piece of very flexible, dull, copper wire. If this shows at all it is only slightly,

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and can easily be spotted out. The owner may stand behind the background, looking over it, and, of course, well above the top of the picture. More often the holding should be done by some third person, the owner meantime talking to the dog. When the dog is in position the owner, telling it to stand still, walks slowly out of the range of the camera. If the dog does not watch him sufficiently alertly, the necessary expression of interest will be got by breaking a bit of bread or a biscuit. I focus as soon as the dog is in position, draw the slide, and hold the bulb in my hand ready to press. I always make the exposure the moment the dog looks as I want him. Some plates show movement, but I do not lose as many as when I first commenced and used to hesitate, wondering if the dog were going to move. And sacrifice anything you like for speed, as long as exposure isn't sacrificed. There *must* be a sufficient exposure.

The work which I do in the garden is the same, except that I have a grass-covered bank built about seven feet high, with a broad step half-way. The dog stands on this, and the bank forms a sort of continuous background.

The last method is taking dogs out with their masters. I first tried this with a quail dog, and so pleased its owner that he sent me several other customers. I use a reflex camera, and where I have the right sort of owner to help me can get some good pictures of dogs at work. At first I used a 5 x 7 kodak fitted with a Zeiss lens, and do not think I have beaten it much, and certainly have not beaten the films which I used in it. With this camera I seemed never to need a finder, but always got the dogs where I wanted them without one.

About the money end of the business: During the summer months I must have averaged three or four sitters a week, either dogs or dogs with their owners. The takings have averaged about $7 per customer, and I calculate three-quarters of it would not have come to me had it not been for the dogs—their owners would not have come on their own account. I do not think that I can reckon much cash asset, after paying expenses, out of "field work." I like the work and take it on, as I am so fixed that I need not be in the studio every day. If it meant losing money at home it would not pay me at all to go out-of-doors.

I keep rather more than half my window full of dog pictures. One or two only would do no good, but with a full show people see that it is a special line with me. I have never been able to trace a cent that I have lost through anyone objecting to a studio in which dogs are frequent visitors.

THE AID OF A MIRROR.

BY WILLIAM J. ROTE.

THERE are several ingenious uses for a mirror in connection with photography. There is the old, old dodge, several times patented and forever being quoted, of placing a mirror on or in front of the camera, so that the sitter may gaze into it during the exposure. This is intended to induce a pleasant expression; but in practice it does not seem to succeed. The making of photographs showing one person from three or five view-points at one exposure—a thing easily accomplished with two mirrors—has often been done, and more than one firm has found it a useful novelty, or even a regular line.

A mirror is a useful occasional accessory in a studio, as a very taking pose can sometimes be arranged by posing a lady before and looking into it. A direct photograph is thus obtained of the side or back of the head and dress, while the lady's face itself appears gazing from the mirror.

All these ideas are occasionally useful in some classes of business, but the mirror has a more important use in photographing some interior subjects where space is limited. A wide angle lens will do the work, and on account of its portability will continue to do it, but a longer focus lens with a mirror will give better perspective. The amateur, who does not always possess the wide angle lens usually does possess the mirror.

In working in a small room—say one

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ten feet in length—in practice a couple of feet are required behind the camera for focusing, etc. This gives a bare eight feet between the lens and the opposite wall; or a little more if the room is being photographed diagonally; too little to allow of much representation of the room, and little enough to insure considerable distortion. A wide angle lens will include sufficient to give an idea of the room, but it will be subject to all the trouble of distortion. By the use of a mirror this distance may be doubled or slightly more. The mirror is placed vertically against the wall opposite the one to be photographed, and the camera is placed facing the mirror and close against the wall which is to be photographed; or, rather, so close as to just allow space for focusing. In a room of say ten feet, the mirror is practically that distance from the wall to be portrayed. The camera being about eight feet from the mirror gives an apparent distance of some eighteen feet between the lens and the distant corner of the room as seen in reflection. The tripod is of course so arranged that it is not reflected into the lens—a thing easily guarded against by placing the mirror slightly diagonally, or so that it gives a diagonal reflection. In practice it is easier not to include the tripod than to include it. Not only is a more correct perspective obtained, but a lens of large aperture may be used in lieu of a wide angle, thus giving a more brilliant picture with a shorter exposure. The quality of the mirror is an important factor. A clear, even plate glass is best, and preferably a thin glass. Many mirrors show a double image, and when a cheap mirror is used this is sufficiently distinct to be caught by the camera, but it is not noticed in the print unless very closely looked for. The more diagonally the mirror is placed the more will the camera catch this double image. I have worked with a mirror 36 x 24 inches, and have taken portraits and portions of rooms, "cozy corners," and even pictures with it. For taking a considerable portion of a small room a mirror up to twice this size would be required. In portraiture it is especially useful for amateur interior work—the professional always has plenty of room in his studio. In small rooms, where the camera will not give more than the head, camera plus mirror will give almost a half-length; or a half-length can be increased to a full-length. The picture will be reversed as regards left and right, and this (unless a film is used) can be obviated by stripping, or by printing in single transfer carbon.

There are several other uses for a mirror, but they are minor ones; more calculated for the amusement of the amateur than the assistance of the professional.

THE COMPLETE ELIMINATION OF HYPO FROM PLATES AND PAPER.

THE use of volumes of water for plate and print washing, entirely out of proportion to the amount of hypo to be eliminated, has attracted much attention, and a comparative study of the efficiency of the methods employed forms the subject of a communication recently received from Messrs. Lumière.

Varied tests were made, the principal of which we quote.

1. The first consisted of washing a single 13 x 18 cm. print. This was washed before toning, and after fixing was allowed to remain for twenty minutes under a tap passing seven and a half litres of water per minute, using in all 750 litres, and it was found that hypo still remained in the print in marked quantities.

2. Secondly, a 13 x 18 print was washed for periods of five minutes in eight changes of water each of 100 c.c.

3. The duration of washing was increased, tests being made of ten minutes, twenty minutes, and thirty minutes, respectively.

The presence of hypo was demonstrated by the use of a solution of iodine and starch, and we give in Table I. a tabulated statement showing the relative effects of the washings.

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TABLE I.

Washings each of five minutes' duration in 100 c.c. water.	Quantity of hypo found in 100 c.c. of washing water, print being drained between each bath.
1	0 588 grs.
2	0.0496
3	0.0074
4	0.0022
5	0.0015
6	0.0006
7	0.00031
8	0.00016

The tests mentioned in Case 3 gave results practically identical with the above, as did further tests, in which the quantity of water used for each washing was doubled, as also in the case of ten prints being washed instead of one, using ten times the quantity of water (*i. e.*, one litre) for each washing.

The method of Case 1 shows a result, after the twenty minutes' washing, about the same as after the fifth washing by changes of water.

Tests made on similar lines, but using plates, show that the method of washing by frequent changes of water is more complete and satisfactory in the elimination of hypo than the more common method of using running water.

Similar variations of time and quantity of water were made, and the figures given in Table II. may be taken as a standard of the relative effects of each washing.

In the case of both paper and plates after such a series of washings, which is apparently the means of the most perfect elimination of hypo, traces still remain in the gelatine film, and can readily be shown by applying pressure. The moisture expelled will be found to contain hypo in appreciable quantities.

TABLE II.

Plate washed in 100 c.c. water for five minutes.	Hypo crystal found in 100 c.c. washing water.
1	0 332
2	0.0372
3	0.00868
4	0 00248
5	0.00125
6	0 00136
7	0.00074
8	0.00074

Experiments were also made as to the possibility of removing these last traces of hypo, and it was found that, though complete freedom from hypo was most difficult to attain, a great advantage was shown if the prints or plates were submitted to pressure between each washing, and the moisture expelled.

From the experiments the following conclusions may be drawn:

The plates and papers are most effectively washed by being subjected to a series of washings, each of five minutes' duration, and allowing 100 c.c. of water to the 13 x 18 cm. plate or print.

That the elimination of hypo is more thoroughly and rapidly attained by the aid of pressure between each washing.

A further communication is promised shortly, giving the results of a series of experiments in the elimination of hypo by chemical means.—*Photographic News.*

THE PERSULPHATES AND THEIR USE IN PHOTOGRAPHY.*

BY DR. HUGH MARSHALL.

When an electric current is passed through an aqueous solution of a salt, the salt invariably undergoes decomposition into the metallic part on the one hand, and that which is not metal, on the other. The former is liberated at the terminal connected with the negative pole of the battery (the cathode), while the latter is liberated at the other terminal (the anode). In a great many cases secondary changes take place as soon as the constituents of the salt are liberated, depending on the nature of the constituents, and also on other conditions. In the case of potassium salts, sodium salts, and ammonium salts, as well as others, the liberated metal (or metal-like group, NH_4) cannot exist in presence of water, but decomposes the latter with formation of free hydrogen, so that in such cases the latter gas is evolved at the cathode. The product liberated at the anode may undergo various changes,

* Read before the Edinburgh Photographic Society.

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according to circumstances. It may act upon the material forming the anode; if the anode is unattackable, it may act upon the water, or upon substances dissolved in the water, or the individual particles of the primary product may unite among themselves to form more complex particles of a secondary product. It is the last kind of action which gives rise to the formation of persulphates by electrolysis.

When a dilute solution of an acid sulphate, let us say, for example, the potassium salt, $KHSO_4$, is electrolyzed, a great proportion of the hydrogen of it plays the part of a metal, and travels with the potassium to the cathode, while SO_4 goes to the anode, and, on being liberated there, acts upon the water to form sulphuric acid and free oxygen, which is evolved. In a concentrated solution, however, much of the hydrogen remains united to the SO_4, and the group HSO_4 is liberated at the anode. Many of these HSO_4 particles when liberated act upon the water to form sulphuric acid and free oxygen, but many others unite together in pairs to form the more complex group $H_2S_2O_8$, which is persulphuric acid.

It is found that the proportion of the liberated groups uniting in this way is greater the more closely the HSO_4 particles are packed together at the moment of liberation, and therefore it is advisable to keep the surface of the anode very small if a good yield of persulphate is desired. It is also necessary to keep the temperature low. In course of time, as the proportion of persulphuric acid in the liquid round the anode increases, potassium persulphate is formed from the persulphuric acid and the potassium bisulphate present, and being sparingly soluble soon begins to crystallize out.

On a small scale the preparation of potassium persulphate can be easily and simply shown in the following manner: A wide Y-tube, sealed at the bottom but open above in both limbs, is filled with a saturated solution of potassium bisulphate. The cathode, consisting of a cylinder of platinum foil or sheet lead, is immersed in the liquid in one limb, while the anode, consisting of a thin platinum wire, is immersed in the liquid in the other. The tube and its contents are kept cool by being placed in a vessel of cold water. On passing a current from a battery of two accumulators through the solution for some time, a considerable quantity of persulphuric acid is produced, and in about a quarter or half an hour potassium persulphate begins to crystallize out and collect at the bottom of the tube.

On the large scale a "divided cell" is used for the electrolysis, that is to say, the liquid surrounding the anode is separated from that surrounding the cathode by means of a porous septum, so as to hinder as far as possible the transference of persulphate to the cathode, where it would be decomposed with reformation of acid sulphate. Various other particulars have to be attended to, into which it is unnecessary to enter here.

Ammonium persulphate is easily prepared in the same way from ammonium bisulphate, and the sodium salt can also be obtained from sodium bisulphate, but with greater difficulty, as it is much more soluble in the acid liquid. These three are the only ones which have been obtained directly; others have been prepared indirectly from ammonium persulphate.

The crude products obtained by electrolysis are impure, and require to be purified by draining off the adhering acid liquor, washing with cold water, and, if the purest obtainable product is required, dissolving in warm water and recrystallizing. Potassium persulphate is very sparingly soluble in cold water (about 1.7 per cent. at 0° C.); being much more soluble in warm water, it can be easily purified by recrystallization. Ammonium persulphate, on the other hand, is very soluble in cold water (about 55 per cent. at 0° C.); it is, therefore, not nearly so easily purified as the potassium salt. The difficulties are still greater in the case of sodium persulphate.

The dry purified salts can be kept for a long time without undergoing appreciable decomposition. I still possess part of the original preparation of potassium persulphate, and some samples which were prepared ten years ago and preserved for use in bottles in the ordinary way have undergone hardly any chemical change in that time. Moist or impure specimens, however, decompose gradually with formation

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of acid sulphate and liberation of oxygen (partly as ozone), and ammonium persulphate is not so easily preserved as the potassium salt. By the decomposition of ammonium persulphate oxidized compounds of nitrogen may be produced. Solutions of persulphates gradually decompose, especially on warming, like the moist solids. The pure dry salts are immediately decomposed when strongly heated.

Seeing that persulphates evolve oxygen in presence of water, it is evident they will act as oxidizing agents. These oxidizing actions are best seen in concentrated solutions, especially in presence of acids. In fact, a mixture of persulphate with sulphuric acid constitutes what is probably the most powerful oxidizing agent known. On account of this oxidizing action persulphites may be, and in certain cases actually are, employed for bleaching and disinfecting purposes, and also medicinally.

In moderately dilute aqueous solutions, however, perhaps the most striking character of the persulphates is not so much a direct oxidizing action as their tendency to take up metals and form sulphates. From this point of view potassium persulphate, $K_2S_2O_8$, to take a definite example, might be looked upon as potassium sulphate, K_2SO_4, united to an extra SO_4, this extra SO_4 being easily given up to form sulphate by union with a metal. Consequently, a solution of potassium persulphate (or, indeed, for that matter, of any other persulphate) not only attacks and dissolves most metals which form sulphates more or less soluble in water, but also decomposes many metallic compounds, abstracting the metal and thereby giving rise to many interesting reactions.

The action on metals themselves is best seen in the case of copper, owing to the color of solutions of its salts. If strips of the bright metal are placed in a test tube and covered with a solution of persulphate the solution soon becomes blue, showing that the metal is rapidly attacked. If a fairly concentrated solution of persulphate has been employed the liquid becomes quite warm, indicating that the action evolves a good deal of heat. In such actions there is no evolution of gas, as is the case when metals dissolve in acids, the two sulphates being the only product—

$$(NH_4)_2S_2O_8 + Cu = (NH_4)_2SO_4 + CuSO_4.$$

A similar action takes place with other metals, including silver; there are certain peculiarities in the case of silver, which will be referred to subsequently. The actions with metals like copper and silver which do not dissolve in the common dilute acids, except nitric acid, are of considerable interest, as they permit of the use of persulphate solutions for the purpose of etching these metals, in place of the somewhat objectionable nitric acid generally used.

The great ease with which some metals are attacked is well illustrated by shaking up some fine, clean, iron filings with a fairly concentrated solution of ammonium persulphate; the metal is rapidly dissolved, and there is great evolution of heat.

The action of persulphates in removing metals from their compounds is illustrated by their behavior toward a solution of an iodide; iodine is gradually liberated and sulphate formed—

$$K_2S_2O_8 + 2KI = 2K_2SO_4 + I_2.$$

Similar actions take place with chlorides and bromides, and there are others of considerable interest. I shall only refer further to one which is of special interest photographically—that with a solution of a thiosulphate ("hypo"). In this case, a tetrathionate is produced, the same as when iodine acts upon a thiosulphate; in fact, this reaction can be employed as a method of preparing tetrathionates. Persulphate is a more powerful oxidizing agent than chlorine water. Chlorine oxidizes thiosulphate to sulphate, and it might have been expected that persulphate would also do so. This is not the case, however, the direct action being represented by the equation—

$$K_2S_2O_8 + 2K_2S_2O_3 = 2K_2SO_4 + K_2S_4O_6.$$

Some metallic salts are converted into higher salts of the same metal by means of persulphates. Thus solution of ferrous sulphate is quickly changed into ferric sulphate—

$$2FeSO_4 + (NH_4)_2S_2O_8 = Fe_2(SO_4)_3 + (NH_4)_2SO_4.$$

In other cases peroxides are formed; this is well shown by warming a solution

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of a manganous salt with persulphate. A similar reaction takes place with silver salts, and in this case the changes are of exceptional interest. With potassium persulphate a black precipitate of silver peroxide is gradually formed on the addition of a solution of silver nitrate or sulphate; in course of time this precipitate decomposes and dissolves, oxygen being evolved. With ammonium persulphate, however, the action is different; very little, if any, silver peroxide is precipitated, but the solution decomposes far faster than one to which silver salt has not been added. Under these conditions also the decomposition products are not merely those formed from a pure solution, as a considerable quantity of nitric acid is produced by the oxidation of part of the ammonium nitrogen, thus—

$$8(NH_4)_2S_2O_8 + 6H_2O = 7(NH_4)_2S_2O_8 + 9H_2SO_4 + 2HNO_3.$$

Although the oxidation is due ultimately to the persulphate itself, from experiments I have made there can be little doubt that the particular course which the decomposition takes is brought about by the intermediate formation of silver peroxide, which then acts rapidly on the ammonium. A small quantity of silver can thus cause the decomposition of a large quantity of ammonium persulphate in a relatively short time. The greater the quantity of silver in a given quantity of solution, the more rapid is the change, and the rate is also greatly increased by rise of temperature.

The great influence which small quantities of silver have on the decomposition of persulphates is best shown in ammoniacal solutions. In this case the products are again different, ammonia being oxidized to free nitrogen in accordance with the equation—

$$3(NH_4)_2S_2O_8 + 8NH_3 = 6(NH_4)_2SO_4 + N_2.$$

The action can be strikingly exhibited by preparing a cold saturated solution of ammonium persulphate in strong ammonia, and then adding to it a small quantity of silver nitrate solution. Until the silver is added no action is observable in the solution, even on standing a considerable time, but as soon as the silver is added effervescence sets in and steadily increases; at the same time the solution becomes warm, so that ammonia begins to boil off, and the action becomes quite violent.

It is evident, therefore, that a soluble silver compound present in a solution of persulphate, though it may not make the persulphate a more powerful oxidizing agent, nevertheless acts powerfully as a "catalytic agent" in accelerating the action of the persulphate, and making the change proceed in a manner different from that observed in the absence of silver.

We may now consider shortly the special applications of persulphates in photography. The first of these to be proposed was the use of potassium persulphate as a "hypo-eliminator," under the name of *anthion*. As I pointed out a considerable time ago, however (*Jour. Soc. Chem. Ind.*, 1897, xvi. 399), such a use is based on an entire misconception of the action of persulphates on thiosulphates, and is open to two serious objections directly contradictory of the advantages claimed—firstly, the tetrathionate which results from the action is just as objectionable as the original thiosulphate, as it easily decomposes, giving free sulphur and other deleterious products; secondly, the persulphate is certain to attack the silver image itself. The latter of these objections, however, leads to the second proposed use of persulphates in photography, one which has proved much more practical and satisfactory than the other, namely, the use of ammonium persulphate as a density reducer for negatives.

The action of ammonium persulphate as a density reducer is simply that of a silver solvent already referred to, silver sulphate being formed—

$$(NH_4)_2S_2O_8 + {}_2Ag = (NH_4)_2SO_4 + Ag_2SO_4.$$

Shortly after its introduction for this purpose, however, it was stated that ammonium persulphate differed from the substances employed for the same purpose in that it acted to a greater proportionate extent on the densest part of the negative, and was therefore superior to other density reducers in most cases where their employment is desirable. A preferential action of this kind is just the opposite of what we should expect, and was at first inexplicable, and I understand that some ob-

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servers have contradicted the statement. In view of what I have already shown, however, as to the effect of silver salts on persulphate solutions, it is now possible to give a reasonable explanation of such an effect. With a silver solvent unaffected in its action by silver salts in solution we should expect the less dense parts of the negative to be most attacked (proportionately, of course), for the following reasons: Unless the action is a very slow and prolonged one, the quantity of solvent first taken up by the film will be replaced only to a slight extent as it becomes used up, owing to the somewhat slow exchange of material between the unabsorbed solution and that in the gelatine. We may assume that at first the quantity of silver dissolved at any part is roughly proportional to the density of the image at that part, consequently wherever the density is greatest the solvent will be most weakened by the using up of its active ingredient there. The action will therefore become slower at these places while continuing at an almost undiminished rate at points where the density is very slight, therefore, with such density reducers we should expect the dense parts to be proportionately less reduced than the others.

In the case of ammonium persulphate, the same reasoning applies up to a certain point, for the greater dissolution of silver in the denser parts will cause a greater diminution of the amount of available persulphate there. But, on the other hand, the solution at these places has been rendered more active by the presence of a larger proportion of silver sulphate in it, and this increase in rate of action may be sufficient to balance or reverse the weakening effect due to greater destruction of persulphate.

That the quantity of solution originally absorbed by the film is sufficient to bring about most or all of the action, without being replenished from that in the dish, is shown by the extent to which the action proceeds when the plate is bodily removed from the dish, which makes it necessary to destroy the persulphate in the film as soon as possible after the reduction has proceeded to a sufficient extent. This is effected by means of solution of sulphite, which is oxidized to sulphate—

$$(NH_4)_2S_2O_8 + 3Na_2SO_3 + H_2O = (NH_4)_2SO_4 + 2Na_2SO_4 + 2NHaSO_3.$$

If the above explanation is correct, a strong solution of persulphate, freshly prepared, should work best where reduction in contrast is required. Where a more uniform and proportionate reduction of density is required, a more dilute solution already containing a small quantity of silver salt would probably be preferable, as in such a case the local increase in the proportion of silver salt at the denser parts of the image would have less effect relatively than would have been the case had the solution been quite free from silver originally.

It is evident from what has been stated that solutions once used will not keep for any length of time, and their action may differ distinctly from freshly-prepared ones, owing to the presence of the small quantity of silver sulphate which they contain.

MERCURY.

MERCURY, with his winged feet, was the messenger of the ancient Greeks; he was a swift person. As an all-night rambler, he can frequently be seen ogling Venus and the other planets in the star-spangled dome of night, and is generally the last one in the bunch to get home and be respectable in the morning.

Mercury, as a metal, has the distinction of being the only metal that is fluid at ordinary temperatures, and, not only is it fluid, but it is also volatile, and will evaporate like water if left exposed to the air. It combines directly with other metals, making amalgams, many of which; unless greatly heated, are harder and more permanent than either of the metals alone, and siver amalgam, the one that is formed when a mercuric salt is used as an intensifier of thin negatives, and which is also occasionally used by dentists for filling teeth, is one of the most permanent of them.

The process of treating thin negatives with corrosive sublimate until the image is

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well bleached, and then giving them a bath of ammonia or a sulphite to darken it again, is the oldest form of intensification, but it cannot be recommended, for by that process not only is the durable amalgam formed, but there is also a formation of black mercurous oxide which with greater or less rapidity but irresistible surety oxidizes the gelatine film—actually burning it up, for oxidizing is burning, and burning is nothing more nor less than oxidizing.

For the same reason, a compounded intensifier that contains a sulphite as an ingredient, or one that contains hypo, cannot be recommended.

Lumière Bros., those celebrated French photographic specialists, have pointed out that of all the mercuric salts that can be used for intensifying negatives, the iodide is the only one that can be relied on to give an intensification that does not include an oxidizing by-product.

Not only have the Lumières shown this, but most of the modern investigators, both in Europe and in America, have arrived at the same conclusion, and now mercuric iodide is the base that the best of them rely on when making up intensifying solutions.

Mercuric iodide is insoluble, generally speaking, except in a rather strong solution of iodide of potassium or some other soluble iodide of an alkali metal, but the iodide of potassium-mercury solution will not act as an intensifier, but rather as a reducer, hence it follows that the photographic chemists have had to seek for some solvent that would permit a precipitation of mercury in the presence of the silver image of the negative.

Since the Lumières have issued a mercuric iodide intensifier, it is evident that they have found such a solvent; and various of the American dry plate manufacturers have printed formulæ for mercuric iodide intensifiers on which either sulphite or hyposulphite of soda have been used as solvents, it follows that these two salts can be used; but, as above noted, neither sulphites nor hyposulphites should ever be used with mercury if permanence is to be desired, so they may be disregarded.

Just what solvent the Lumières use is unknown to this writer, but it is quite certain that it is neither of the above, or they could not furnish a stable solution.

The only mercuric iodide intensifier made in this country, so far as we know at present, is manufactured by Messrs. Burke & James, of Chicago, and it is being marketed under the appropriate name of Intensine.

Unlike European preparations of mercury, Intensine is furnished in powder form so that it can be readily shipped through the mails, and its low price, small bulk, and high effectiveness have given it a phenomenal sale among American photographers.

We are willing to admit a strong personal bias in favor of Intensine, and would feel very much like advocating its use even if it were less good than it is; but, as a matter of fact, it is good stuff—it, in our opinion, is the best ever made, and we have tried most of them.

It takes a thin negative, one of those undeveloped, thin, flat, good-for-nothings, and brings out all the details together with a contrasty density that goes to make up a good, strong-printing negative, and it gives it that shade of color that the pyro exclusivists insist on.

Mercurous iodide is a greenish-yellow salt, and it sometimes happens that this salt is formed on a negative that is being treated with Intensine. Just why this happens is not known, but it is probably traceable to some organic peculiarity of the gelatine film on the plate, for it is only occasionally that it occurs, but, whatever the cause of it may be, it may be disregarded, for mercurous iodide is a stable salt and its presence in the film will not injure it in the least, and, if anything, only tends to improve the printing qualities.

If, however, the yellowish tint is distasteful to the operator, he has only to immerse the intensified plate in a normal dry plate developer for a short while when the salt will be reduced to metallic mercury amalgamated with whatever silver it may have been in contact with.—R. MARTIN *in the Photo-Mirror.*

The delicate surface of bromide paper, when roughly rubbed or handled, sometimes shows pencil-like markings where bruised. These can be removed by gently rubbing the surface with a wad of cotton batting, dipped in wood alcohol.

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The secret of the stick-in-the-mud is to do nothing that has not been done before, and to shun originality as though it were the very devil. The secret of success is to use one's brains—and hustle.

A contributor writes: "I have dried hundreds of negatives in a few minutes after removing them from the washing water. I wipe them as dry as possible on *both* sides with a soft, clean, cotton cloth, and then hold them close to the stove, the glass side nearest the fire. In summer I I hold them to the sun instead, and I have never lost a plate." We have often dried plates, wanted in a hurry, in this fashion, but more than once they have come to grief.

How if your studio goes up in smoke when you are at the convention—or any other time? Of course, you are insured O. K., and of course the premium hasn't run out.

Carbon prints may be intensified, says Dr. Vogel, by a decoction of logwood; this acts by uniting with the chromium compound in the print.

A soft, pleasing enlargement may be obtained from a hard negative by a modification of the old plan of making several successive positives and negatives. Place a transparency plate in contact with the negative, and give a very short exposure to light. Develop a thin positive from this, and place positive and negative film to film in exact register. When they exactly coincide bind the two together, and the negative is ready for copying. If the positive is too thin, the negative will still enlarge too harshly; if too vigorous the negative will be too flat. This hint is not new; but it has often been discovered, and on modifications of it several claims to fame are based.

Silhouettes are often made as a novelty by photographers. There is not, perhaps, any money in them except very occasionally, but a modification might prove commercially useful as a season's novelty in some seaside or holiday resort. Instead of giving the usual dead-black thing, reflect just a little light back into the shadow. This can easily be overdone. Just enough is required to give a slight grayness to the cheek and to indicate the collar. A very effective combination of ordinary portrait and silhouette can be made by posing a subject with her dark side toward a mirror. The sitter is photographed in the usual way, and a shadowy silhouette is reflected from the mirror. Some little care may be required in the pose in order to get a clear profile in the reflection, but if well done the result will be a very attractive show-case subject.

Rough retouching without medium is easily and simply accomplished by matting the surface of the negative locally with a touch of pumice powder on the finger-end, then working the requisite touches on it with the lead-pencil. This surface is much easier than medium for the beginner to work on, and has the distinct advantage of taking more lead. Moreover, defects may be removed by its means that would be more difficult with the ordinary method.

Spotting Pinholes. Pinholes cannot be spotted out with a pencil so well as with a very fine sable-hair brush with the pigment almost dry. Retouching medium is best applied with the tip of the finger. It dries at once, and a pencil may then be used, but it is not so suitable as a brush. As there appears to be some prejudice against the brush, an alternative method nearly as good is to use a fine-pointed quill pen to apply the pigment with, or it may be charged with writing-ink which has been exposed to the air till it is slightly thicker than is agreeable for writing purposes.

When making up solutions it is a good plan to put the date on the label, especially in the case of solutions that are not very frequently used. The age of the solution can be seen at a glance, which is in most cases a very good guide as to its fitness for use, and often avoids a waste of other material in trying it.

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PICTORIAL PORTRAITURE

By Sarony, Scarborough, England

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PICTORIAL PORTRAITURE

By J. H. Kemp, Scranton, Pa.

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EXAMPLES OF POSING

By Sarony, Scarborough, England

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PORTRAITS OF CHILDREN

By Sarony, Scarborough, England

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TWO POSES OF CHILDREN

By Sarony, Scarborough, England

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PORTRAITS

By Sarony, Scarborough, England

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A STUDY IN EXPRESSION

By Sarony, Scarborough, England

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COSTUME PORTRAIT

By J. E. Watson, New York

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OUR PICTURES.

THE pictures illustrating this issue of the MAGAZINE will come as a pleasant surprise to many of our readers. Sarony is a well-known and honored name in American photography—Napoleon Sarony, of New York. But comparatively few workers in the profession here have any knowledge of his brother, Oliver Sarony, of Scarborough, England, from whose studio our pictures came.

When Napoleon Sarony started a studio at Birmingham, England, his brother, Oliver, opened an establishment at Scarborough, a fashionable watering-place on the east coast. He died a few years ago, after a long and successful career, and the business is now carried on in the name of Sarony & Co. We are glad to be able to show some of the everyday work of the English studio which has as high a reputation as any photographic establishment in England outside of the metropolis.

The Sarony studio, located on Sarony Square, Scarborough, is a prominent feature among the attractions of that delightful seashore resort. It occupies a large and elegant building standing in its own grounds in the fashionable quarter of the town. Outwardly the place has the appearance of a country mansion, the well-kept grounds, terrace and shrubbery giving the visitor a most agreeable impression at first sight. By the handsome central door the visitor enters a spacious corridor which traverses the entire building. The parquet flooring, Eastern rugs, pictures, and general appointments of the place lend an attractive interest, and are arranged with admirable taste.

A large apartment at the right hand is devoted to business offices and a general show-room. Here a profusion of photographs in every conceivable style and size is displayed, the different classes of work being unconventionally grouped in an effective way for the convenience and comfort of visitors. Pictures of celebrities, fair women and beautiful children in platinotype, silver, and carbon, colored miniatures and large direct portraits meet the eye at every turn. Skill in posing and lighting, careful and thorough workmanship in detail characterize the examples of photography here shown. Here and there are groups of paintings in oil and water-color, many of them by artists of national reputation. In one corner is seen a charming display of colored miniatures on ivory, some of which have been hung at past exhibitions of the Royal Academy.

Another room is wholly devoted to portraits in pastels and water-colors. During the season Sarony & Co., who are dealers in works of art as well as photographers, make a special feature of public exhibitions of pictures by famous artists, thus attracting to their rooms picture-lovers who may be visiting the locality. The establishment is free to visitors at all times, in fact is regarded as one of the show places of the town, and few people visit Scarborough without a glimpse through the studio.

At the end of the long corridor are several dressing-rooms and two luxuriously-appointed reception-rooms. The principal gallery (there are two skylights) is on the first floor. It is a room of magnificent proportions, and thoroughly equipped for all the requirements of the best classes of studio work. On the same floor are the painting-rooms, occupied by the artists permanently retained by the firm in addition to a staff of outside workers. It should be explained that portraits in oils and water-color (in the larger sizes) form an extensive department in the business of the establishment.

In everyday portraiture platinotype and carbon are almost exclusively employed, silver prints being rarely called for. The prices for ordinary sizes are listed as follows: Twelve cartes-de-visite, $5; three imperial portraits, $5; panel portraits, from $5. If artistically "worked up" by hand, twelve cabinets cost $15. Proofs are delivered the day following the sitting.

From this brief description our readers will gather a fairly-comprehensive idea of the Sarony Studio. It is, in fact, as if half a dozen of our city studios were united under one roof. Its business is drawn not only from the fashionable life of the town during the yearly season, but from its lo-

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cality for a hundred miles around the town—a locality abounding in "county families" and the country residences of well-to-do people. As a watering-place Scarborough will compare favorably with our Bar Harbor or St. Augustine's.

A TIMELY SUGGESTION TO GET BUSINESS.

BY W. I. SCANDLIN.

WHEN, in his "Idylls of the King," Tennyson caused King Arthur to say, "The old order changeth, giving place to the new," he had not in mind the photographic studio of to-day, although it seems to the writer that at this particular season of the year the quotation should apply to every photographic business. To put it in prose, let it read something like this: The time for renovating and freshening has arrived, and the studio, if it has not already been through this process of renewal, must at once be subjected to it. Make it a rule that, at least once a year, all the old trappings and decorations be taken down and thoroughly cleaned, if nothing more; but, better still, on removing the hangings that have done service during the long winter months, substitute for them during the summer an outfit of an entirely different nature. Let the keynote of the summer decorations be lightness and airiness; freshening things up with a coat of paint where needed, and let your patrons see the effect of a change at least as often as spring and fall. This need not be an expensive operation, for, in these days of dainty effects and moderate prices in goods adapted to draping, a few dollars will cover all needed outlay in this direction.

People tire of coming into the same room time after time, no matter how attractive it may have been at the beginning, and there is somehow in the air at this time a feeling of restlessness which demands changed conditions, indoors as well as out. It is wonderful to note what a subtle influence these balmy spring and summer days have upon the human organism, and the man who caters to this ultra sensitiveness shows himself to be possessed of qualifications that, carried to their logical conclusion, mean business success.

Now, taking for granted that the spring cleaning has been done, that the gallery is fresh and dainty, all in readiness for the summer work, we believe that a very excellent feature to introduce at this juncture is an exhibition, or it may be called a "summer opening," a pictorial reception, or what not. A few suggestions for the conduct of such an affair are herewith submitted. Let it be known at once among your friends and patrons that such an exhibition is in preparation and that it will be held at or about a certain specified time, the date being placed far enough ahead to enable you to procure all the material necessary without hurry and disappointment. Your arrangements perfected, and the time for the exhibition being close at hand, remove from the walls all your old specimens and in their place hang whatever good work you have been able to get from some of the recognized leaders in photography; men whose work stands for good photography in every sense.

You will probably have little difficulty in obtaining from these men the loan of a collection of prints for this purpose, provided you are willing to stand the small expense necessary to cover the cost of transportation to and from your establishment. The willingness of our successful photographers to assist their ambitious colaborers in this way is noteworthy.

See to it that your collection is artistically grouped and properly hung, keeping the work of each exhibitor by itself and keeping your own work entirely subordinated to that of the others. It will frequently be possible to obtain, in addition to photographs, the loan of a few choice etchings, engravings or paintings from some of the more artistic of your patrons, in which case a room or part of a room, at least, should be reserved for them, remembering, however, that oil paintings cannot to advantage be hung together with either black and whites or photographs.

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See to it that each picture is plainly marked with its title, and that due credit is given to the owner for its loan.

Have your announcement prepared and mailed to every person in your neighborhood whom you desire to influence in your direction, long enough before the exhibition, so that it may be talked about, and take pains to cultivate the representatives of your local paper, sending invitations to them and arranging through them for whatever newspaper publicity you may be able to obtain before and after the event. Let this publicity be through the reading columns, however, and not through the advertising columns of the paper.

Hold this opening or reception during the afternoon and evening of one or more days, and if the local conditions are such as to render it wise, afternoon tea may be served under the skylight, which, for the occasion, may be turned into an arbor decorated with shrubs, vines and flowers. Let it be clearly understood throughout the whole affair, that it is not your design or intention to exploit your own work on this occasion, but that you are providing for the people of your vicinity an opportunity to study the work of masters in photography; that you are laying before them a collection of prints which they cannot see elsewhere. Make this squarely your reason, and get them to your studio for this purpose only. Avoid "talking shop," above all things, and during the time allotted to the exhibition see to it that no work of any kind is carried on in the rooms devoted to it, or visible from it.

Make the occasion, however, an opportunity for improving your acquaintance with your guests. Make mental note of the costumes and peculiarities of your more prominent people, and, later on, take occasion to request the privilege of a sitting, complimentary, of course, from Mrs. A., or Miss B., the representative, perhaps, of some social clique in the neighborhood, or prominent in church or social affairs at large. Give them to understand that you were impressed with the beauty or style of a particular costume worn at your reception, for instance, and that you would like to photograph them as they were on that occasion. A little attention to matters of this kind often wins customers, who would otherwise be beyond your reach.

Informality should, however, be the keynote of this affair when it comes off, and any side attractions that can be added, to relieve it from form and ceremony, are so much to the good, music on the lawn being one of the best on such an occasion. The time for starting such a thing is *now*, and the occasion is, we believe, almost anywhere in this land where it has not already been done.

Its cost is so moderate and its possibilities so large that it should commend itself for trial.

OLD MEN *vs.* YOUNG MEN.

One of the most striking features of business life at the present day is the dominating power of the young man. The constant cry of employers is for young men, and practically the rule exists, sometimes expressed, but generally to be inferred, that "Old men need not apply."

It is said that in some branches of industry men are driven to the expediency of dyeing their hair lest they should be suspected of the mental stagnation and waning spirit of enterprise so often associated with senility. Age and long service, instead of carrying with it the credentials of wisdom, experience and skill, would seem to have now become a curse and reproach. Gray hairs and furrowed brow and toil-wrinkled cheeks, instead of carrying weight as the marks of strength, character, and honest toil, appear to discredit the unfortunate possessor almost as surely as the brand of criminality.

One cannot but commiserate these unfortunate victims of modern business methods, and at first thought it seems cruel and harsh that old age should be apparently so unjustly dealt with. Even the young man, who now reigns supreme, when he sees these sorry wrecks turned away from the doors of his employer, must feel uneasy at

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the prospect that he too must grow old, with perhaps no better chance of employment. The employer who has the painful duty of refusing situations to men because of this disqualification of age, or who has to dismiss men because they have become too old to render effective service, must often feel a pricking of the conscience, a misgiving as to the justice and humanity of his action, but business life steels the heart against sentiment, and to the first feeling of pity succeeds the reflection that business is too stern a struggle to permit wages to be paid out of charity. So the poor derelict is cast out into a cold and unfeeling world, to be chivied about from one business house to another, wherever he applies, until, wearied and broken in body and spirit, he at last lays down his gray head for a rest that knows no awaking.

Such is the sorrow and sentiment of this old age question; but can we help it? Is it not the necessity of our times that provokes this seeming harshness? Is there not another side to the question? Can business to-day be left to dreamers who are content to glide idly down the stream of life without hope and without ambition? Expanding enterprises cannot be left to those who, through no fault of their own, tend to become unimaginative automatons. After a certain stage in life is passed men become unduly timid, losing the power of bending themselves to new conditions, and feeling less hopeful than they did in the days of ardent youth. Opportunities are missed, the inroads of competition are unchecked, and profits grow less and less, until old-established businesses of high reputation sink and decay.

No wonder that the popular demand is for young men—live, smart, energetic, industrious, pushing, active, so the advertisements say—in every department of business life. We must have the latest ideas applied with all the vigor of fresh, ripe manhood by those who have just learned them, for the world thinks the latest ideas are the best. The age is impatient with solemn wisdom, cool deliberation and cautious outlook, and clamors for smartness, even though it may sometimes be akin to superficiality. Inventiveness and originality are worshipped; and established routine, if not actually condemned, is thrown to the winds.

Of course there is a dangerous and questionable side to this tendency of the times. To the youthful mind every object glitters and attracts. The young man's year is a heap of beginnings. One pursuit is given up for another, brilliant ideas are conceived, but either not carried out or incompletely executed, and at the end of a twelvemonth there is nothing to show for it. The bulk of failures in business, from a financial point of view, are by young, or comparatively young, men. Invariably youth has to make costly additions to experience before success is attained. There may be rare instances where young men show such exceptional ability as to make their lives one continual run of success, but Nature in the main vindicates her law that intellect and power can only come with increasing age. Skill to do comes of the doing, knowledge comes by eyes always open and ever-working hands; the powers of discrimination can only come by experience, and experience can only be gained by the efflux of time.

Age presents one striking difference to youth, which must ever give old men the greater advantage. While youth is always suffering from ungratified desires, age has satisfied such cravings, and can look at things with greater complacency. A success, more or less, signifies nothing, and there is a generous instinct always present to give the other fellow a chance. As we grow older we make fewer enemies, and we reconcile many feuds we made while young. Further, there is an ever-present desire with age to set its house in order, to finish its works, and set all tangled interests straight.

Thus we have to discriminate between that age which indicates decay of the faculties, rendering a man careless, indifferent, lazy, unimaginative, and uninventive, and that felicitous old age which is strong and vigorous in intellect to the last.

Nature often puts an old head on young shoulders, or makes a young heart beat under a breast which has borne the brunt of fourscore winters. Thus it is not merely by years that we measure that quality of a man's head which we call old. It is not age alone that we want, but the essence of

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age, and that essence is intellect. So long as that faculty remains bright and unimpaired in old men there is still room for them, and they can never be thrust aside by precocious youth.—*Penrose's Process Work.*

INTENSIFICATION: A PRACTICAL CONSIDERATION AND COMPARISON OF VARIOUS METHODS.—I.

BY HENRY W. BENNETT.

If it were possible to produce from every plate exposed, a negative possessing exactly the required character and quality, intensification would only be requisite in the very few cases in which a negative might be made for one purpose and afterward required for another which demanded a different character.

There are, however, many circumstances under which plates are exposed that render it almost or quite impossible to develop them into negatives that will satisfy the critical worker, even if the exposure has been that most suited to the conditions and requirements, while the conditions may be such that it becomes exceedingly difficult to judge the correct exposure; and if this should not be given, the subsequent difficulties are considerably increased.

In a recent article in *The Amateur Photographer*, Mr. Chapman Jones discussed "Results Attainable Only by Intensification," pointing out many circumstances under which a photographer may have to work that render the result that he requires impossible of attainment by simple development of the plates exposed. To these subjects and conditions might be added many others in which the results are not only obtained far more easily by development and subsequent intensification than by development alone, but are far better in every way.

In passing, the result desired in the production of a negative should be specified, as there are some photographic writers who assert that any required degree of contrast may be obtained from any subject by a mechanical system of development, though the results that they obtain are a sufficient condemnation of their wild theories. The type of negative that will satisfy the critical worker must possess, as far as possible, the following characteristic qualities: It must be free from fog, whether resulting from chemical or light action; it should be free from stain; the extreme shadows should be clear, and the highest lights possess sufficient opacity to give the desired degree of contrast in the printing process for which it is required; the gradation throughout should be good, but especially so in the extreme lights and shadows. This last requirement is only fulfilled in the case of a plate that has received a full exposure, and a full exposure with many subjects renders it very difficult, if not actually impossible, to obtain sufficient contrast without veiling the shadows considerably, and a strongly veiled shadow is a great disadvantage in a negative; in order to obtain sufficient contrast, such a degree of density is necessary that the printing is excessively prolonged, the resulting prints being, in almost all processes, distinctly inferior to those given by negatives that print more quickly. All the requirements specified, excepting the last, could be fulfilled by incorrectly-exposed plates; but good gradation is all important, and that can only be given by a plate that has received a correct or too long an exposure, this exposure being, in many instances sufficient to prevent the other qualities from being obtained. In brief, the ideal negative is the one that will yield a print possessing the required contrast and gradation in the shortest time.

In enumerating those negatives that depart from this standard, stating the cause of their failure to attain the ideal quality will not only indicate the character of their departure from it, but also the nature of the problem set in intensification, which will vary considerably.

1. Difficult subjects, correctly exposed. (*a*) Those possessing very little contrast, and evenly or badly lighted, in which the exposure necessary for the shadow detail will cause the deepest shadows to veil in

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development before the lighter work attains sufficient density; as, for example, a dull or red-brick building in a bad light, a landscape with a weak foreground on a dull gray day, or a flat landscape taken against the light. It may be urged that these are subjects that should not be attempted; but it must be recognized that many such have to be taken for business, while many others are photographed under these conditions in order to secure effects attainable in no other way. (*b*) Those possessing so little contrast that no combination of exposure and development will produce the required vigor in the negative, though there may be no shadow detail to expose for. In these would be included copying line drawings or manuscripts, especially if old and faded. (*c*) Those possessing harsh contrasts, but insufficiently developed for the contrast required in the print, a condition not infrequent, as many workers when dealing with subjects of this character prefer to develop to secure the utmost detail throughout the scale of gradation, and resort to after-intensification should the negative prove too thin, rather than risk too great opacity of the lighter parts, with consequent loss of gradation in both lights and shadows in the print. (*d*) A very large proportion of negatives of subjects possessing a small range of light and shade will require intensification if they are to be used for a printing process that demands a very vigorous negative, although they would scarcely be classified as difficult subjects. Without intensification the resulting prints would be weak in comparison with the rich prints obtainable from negatives of subjects of strong contrast.

If any of these negatives were incorrectly exposed the difficulty of obtaining a satisfactory result would be greater.

2. Over-exposed negatives of ordinary subjects. With plates that are much over-exposed it is very difficult to secure sufficient density without veiling the shadows; this is especially the case if the light is at all hazy, even though the sun be shining.

3. Under-exposed negatives. In many cases under-exposed plates yield negatives that are too thin throughout, but with this thin or weak character most marked in the shadows.

4. Negatives correctly exposed, and developed so as to be thoroughly satisfactory for the purpose for which they were originally required, but afterward wanted for a different process necessitating greater contrast in the negative.

It will very readily be recognized that the problems set for solution by these different classes of negatives are not identical.

An ideal intensifier for many subjects, and especially for those deficient in contrast, or photographed in a dull or hazy light, or over-exposed, would be one that would have a tendency to slightly clear the extreme shadows, so as to remove the slight veiling due to light action, to strengthen the details in the extreme shadows slightly or not at all, and to gradually increase its effect more toward the denser portions of the image so as to produce a degree of contrast or brilliancy beyond the natural result of the exposure. For copying manuscripts and a few special subjects, a method of working that would have a reducing rather than an intensifying action in the extreme shadows, combined with an almost unlimited power of increasing the opacity of the lighter portions, would be exceedingly desirable.

For most work, however, the most satisfactory method is that that will strengthen the image equally throughout its entire scale, so that in increasing the contrast the gradation is not changed.

In under-exposed plates every photographer would wish for an intensifier that would strengthen the shadow details more than the dense portions; but this is an impossibility.

In addition to these special requirements for different classes of work, an intensifier should possess the following qualities: The clearness of those portions of the plate where there is no deposit of silver should be preserved; there should be no tendency to fog or stain, otherwise a very considerable increase of density will be required in order to produce much difference in the contrast in the print. The color of the plate after intensification is important; for ordinary negative work it should be a pure black, as a black negative will give the maximum contrast in the print in a given time. It is very desirable that the operation should be capable of being

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controlled, so as to vary the degree of strengthening, and any difference in the extent to which the plate is intensified should not materially alter the gradation from that given by completing the work. In any case, the result that will be produced, both in degree and character of the strengthening, should be definitely known. It is very desirable that it should be possible to repeat the intensification if the strengthening given at first is insufficient; and the intensified plate should be capable of being reduced should the strengthening prove too great.

Permanence is an essential qualification in the work of intensification; and, apparently, fading or discoloration, or want of permanence in any form, in negatives intensified by most methods, is due more to the absence of reasonable care in working than to any inherent tendency to change in the process itself. I have many negatives that have been intensified with silver or mercury that show no change whatever after eight or ten years; but the work was performed with care at every stage, the plates being well washed, and afterward varnished.

Pyro stain is a frequent cause of apparently irregular action with some forms of intensification. A negative that is badly stained from pyro development will print more slowly and with somewhat greater contrast than the silver deposit alone would give if the stain were removed. If such a negative were intensified with pyro and silver, not only would the silver deposit be intensified, but the stain also; and it would then print much more slowly and with still greater contrast. But if instead of pyro and silver one of the forms of mercurial intensification that tends to give a neutral black or blue-black image when used on a good black negative were employed, the resulting plate would be brown-black, the greater part of the stain disappearing, and the effect of the intensifying decidedly less than its action on unstained plates would have led the worker to expect, both in time of printing and in the degree of contrast. The advantages of pyro stain are so questionable, and its disadvantages so great, especially in regard to intensification, that it cannot be too strongly asserted that the best form of negative is that of a good black color and with clean unstained shadows.

A large number of experimental negatives were made in order to definitely determine the exact effect of each form of intensification of which I had had experience in practical work; for although by systematic and careful observation the general character of different methods of working can be judged from ordinary practice, yet the judgment so formed must, of necessity, lack the definiteness and accuracy that are so readily obtainable from measured tests. In the following notes details are given of those tests that appear to be of interest or practical value to the readers of *The Amateur Photographer*.

With different plates, intensifiers, like developers, act somewhat differently, though the variation is simply in degree and not in character; but this fact is totally inadequate to account for the wide differences of opinion expressed by photographic writers in regard to the relative merits of different methods of intensification.

In making these tests, Mawson and Swan's Castle plate was used; it is a plate that works with exceptional cleanness and freedom from fog or veiling. The plates were exposed in strips from 1 to 256 units, the exposure of each strip being twice that of the preceding; but the 32 and 128 unit strip were omitted, and an additional strip was left unexposed. The actual exposures were 4, 8, 16, 32, 64, 256, and 1024 seconds, the source of light being a wax candle at a distance of 8 feet. The developer was pyro-ammonia, containing in each ounce of solution 1½ grs. pyro, 1½ grs. metabisulphite of potassium, ¾ gr. ammonium bromide, and 2 minims of strong ammonia, the negatives being of a good black color, and quite free from fog or veil on the unexposed strip.

These plates were intensified by the different methods which I had used in ordinary practice. Practical experience in ordinary work is absolutely necessary with any method of intensification or development if the results of experimental research are to be of value to other workers, as there are so many small details that may be important in their effect on the final result that can only be appreciated by those who have had to learn to obtain uniformly suc-

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cessful results day after day. The first described method had long been discarded on account of its unsatisfactory nature.

Freshly made solutions were used in every case, in order that the results might be as definite as possible.

Bichloride of Mercury and Sulphite of Soda.

A.—Bichloride of Mercury . .	1 oz.
Water	20 oz.
B.—Sulphide of Soda, crystallized .	1 oz.
Water	10 oz.

The plate is immersed in Solution A until thoroughly bleached, the bleaching effect being judged from the appearance of the densest portions at the back of the plate; then well washed and immersed in B until blackened throughout. The blackening should not only be judged by the appearance from the back of the plate, but also by looking through it, as with some negatives it is somewhat difficult to judge from the back when the action is complete. By transmitted light the negative will appear first warm purple, then a cold purple, and finally black or blue-black.

The following measurements will show fully the character of the work of this form of intensification; the figures in this and the other tables are densities, expressed in Hürter and Driffield's standard. The density of the strip that has received no exposure is the measurement of the light-obstructing power of the gelatine film, even though it may be exceptionally clean, and exists over the whole plate in addition to the density given for each strip.

	Units of exposure.	Densities before intensification.	Densities after intensification.	Ratio
	0	.070	.070	1
a . .	1	.040		
b . .	2	.180	.150	·83
c . .	4	.460	.420	·91
d . .	8	.770	.770	1·0
e . .	16	1.110	1.150	1·04
	32	.....	.....	1.04*
f . .	64	1.680	1.750	1.04
	128	.....	.....	1·09*
g . .	256	1.930	2.230	1.15

Average ratio of increase of density . .	1.01
Ratio of decrease of density, strips *b* to *d* .	.91
Ratio of increase of density, strips *e* to *g* .	1.07

* The mean between the preceding and following strips has been taken for these figures. They are necessary for obtaining an average ratio on account of the great difference between the thinner and the denser strips.

By setting out these densities on a diagram and drawing curves through the points, the result is presented graphically, and its full effect more readily appreciated.

A—Density before intensification.
B—Density after intensification.

The plate after intensification is a good neutral black color, with no veiling, fogging, or staining of any kind.

It is very difficult to understand how this method of working can have been advocated for so long by photographic writers as a means of intensification, since its result in this respect is of so little value.

It will be seen from the diagram that while in the densest strip there is an appreciable, though still slight, increase of density, this increase becomes less as it approaches the thinner portions, until in the lower squares there is less deposit than before intensifying.

The average density of the strips from *b* to *f* after treatment is only 0.97 of that existing in the same strips before, and as the strip *f* would correspond in density to the lightest portions of many negatives that the average worker would wish to intensify, the gain resulting would be inappreciable, and the slight increase in contrast is accompanied by a decided weakening of all the darker details. While this weakening of the thinnest portions might be useful in the case of a negative with the deep shadows veiled from over-exposure, and so assist in increasing the contrast, yet in the case of negatives with clear shadows, as in these test plates, the actual details are weakened without any clearing of the extreme points of shadow, the gain being only the very slight increase in density of the lightest part.

The opacities or printing values of the different squares are of more value to the photographer than the densities, and it may therefore be interesting to note that strip *f* has its opacity increased by one-sixth only by this process of intensification.

Some further notes on this method are given with the next, as they apply equally to both.—*The Amateur Photographer.*

(To be continued.)

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OZOTYPE.

BY W. C., IN "THE PHOTOGRAPHIC CHRONICLE."

An interesting lecture was delivered on the above subject, on March 20th, before the members of the Hull Photographic Society. The process is a new and improved method of carbon printing, and is called by many the new carbon process. The lecturer, Mr. Williams, has spent a great deal of time and labor on the whole question, and he gave before the large number present the full result of his experience, and I know of no one in the city who has devoted so much time and patience to the subject.

At the commencement he said it was not his mission to depreciate the carbon process proper, or in any way to imply that ozotype is the process to the exclusion of all others, as it was his opinion that any process is the best which gives the desired effect; his duty, therefore, would be to try to explain the process as clearly as he could.

In the carbon method you sensitized a piece of tissue in a bath of bichromate of potassium, dried it in the dark, and exposed under a negative, after which it was soaked in cold water and squeezed into contact with whatever material you wished your print to be on. In ozotype, however, the modus operandi was somewhat different. Instead of sensitizing the tissue you sensitize the material upon which the print is wanted, and instead of using the bichromate of potassium you use a specially prepared solution supplied by the Ozotype Company, which, of course, is patented.

This is spread upon the paper in ordinary gas or lamplight with the aid of a brush, and when dry is ready for use there. At the very commencement of the process you can make preparation for a preconceived result.

If, for instance, you wish to produce a plucky half-plate print, with clear high lights, then select a fine smooth paper. The lecturer knew of nothing more suitable and nice to work with for small prints as the F variety, supplied heavily sized by the Ozotype Company. It is sold in sheets, 24 inches by 19 inches.

To sensitize a sheet of paper of these dimensions take ¼ oz. of the sensitizing solution and add about 20 minims of a 50 per cent. gum-arabic solution. Pour this on the middle of the paper, which may be fastened down to a clean table-top with drawing pins, and rapidly coat the same all over, using a brush not less than two inches wide. Then pin it up somewhere as free from dust as possible for about ten minutes, and finish drying afterward before the fire. When dry the paper is much improved by a vigorous polishing with a soft silk handkerchief. Next cut up to the size required, and store away from the action of light. The object of sizing and quick drying is to keep the solution from sinking into the paper. I understand it will keep in this condition for about five days, but when printed and washed in three or four changes of water and placed between blotting-paper to dry it may then be left to a convenient time to follow on with the pigmenting. Therefore, this point should not be overlooked.

A matt paper gives a flatter picture than a glazed one, due he thought, to the sensitizing solution having sunk into the pores of the paper. If, on the other hand, you are aiming at soft effects, use a rough paper, and allow it to dry slowly; and for softer effects still, dilute the sensitizing solution with water—two of solution to one of water—but do not exceed a total quantity of ¼ oz. with the size added.

For the sheet referred to above, he did not think it wise, even when working for soft effects, to omit the addition of size, otherwise there is a tendency for the print to drop the pigment in the shadows, especially if over-printed. The paper when sensitized resembles very much the platinum paper, being of a pale yellow color on the sensitized side, and the printed-out image is judged in much the same way, printing out only far enough to be able to discern the details in the high lights.

It is not necessary to wash more than ten minutes in several changes of water, as if prolonged washing is given the image

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becomes weakened, as it is slightly soluble in cold water. After the washing and drying you have prints which are subject to no further change, and, therefore, they require no special storage until such time as opportunity arises for finishing them.

The next step is the pigmenting. This is done in much the same way as in carbon process, but instead of soaking the tissue in cold water we must use what is called the acetic bath. This bath is composed, according to instructions, of water, glacial acetic acid, hydroquinone, and copper or ferrous sulphates, in varying proportions to suit the class of negatives to be used. To determine the exact proportion of this seems to be the great stumbling block to the would-be ozotype worker, but once this is removed the process becomes simplicity itself. The lecturer thought he had overcome that obstacle, so far as he was concerned, but it appeared to him to be a question of individual manipulation, and an acetic bath that suits one will not suit another worker.

He had spent a great deal of time on this question of an acetic bath, and in the end he gave up all the various formulæ collected, and made research for himself, the result of which research he kindly gave to those present, and handed round prints selected from the best of his negatives, which had been done without any attempt to take advantage of the facilities offered by the process to control results with a view to obtaining artistic effect, or to eliminate any defect in the negatives. There are undoubtedly facilities nevertheless in the direction of artistic effects in this particular process.

The acetic bath arrived at by Mr. Williams is quite different to the official formula, so far as proportions are concerned, and it is also brought down to a constant factor. It answers admirably for hard, soft and flat negatives. At all events the prints I saw were above the average, and reasonably good. The composition of the acetic bath is as follows:

Water	20 ounces.
Glacial acetic acid	70 minims.
Hydroquinone	20 grains.

The copper and ferrous sulphates served no good purpose, the lecturer said; but, on the other hand, they were a distinct drawback to him; therefore he dropped them out.

Having prepared the acetic bath, you proceed to the pigmenting of the print. To do this the bath is placed in a dish somewhat larger than the print, and the temperature is raised to from 60° to 80°, so says the book; but he found that better results were obtained by keeping it at 77°. The pigment plaster is next placed in the bath, face downward, for about thirty seconds, and is then turned over, and air bubbles removed with a clean brush.

When it has been in the bath a minute the print is taken, and without delay is brought into contact with the now soft plaster, by sliding it into the dish, face down. Then both are lifted out, clinging together, squeezed lightly, and placed between blotting paper. The bringing of the two into contact should take fifteen to twenty seconds—no longer—but it should be done properly rather than be hurried over, or it will be found, on developing, that you have imprisoned a lot of little air bubbles, thus spoiling what otherwise might have been a first-class print.

Although a minute is the time specified for the plaster to remain in the bath, one can vary this a little to compensate for difference in the negatives. If the print is a very weak one from a thin negative, extend the time to 1¼ minutes, or if it is a strong print from a hard negative, 40 seconds will be ample, Having pigmented all the prints wanted, and put them between blotting paper, the next course is to classify them, having previously written on the back of the print, with lead-pencil, the title, characterizing each as weak, normal or strong.

The print marked strong contains a large quantity of that compound which the acetic acid converts into chromic acid, thus rendering the gelatine insoluble, so if we get too much chromic acid we must expect too much insoluble gelatine, and the thing to aim at is to stop the liberation of chromic acid at an early stage. This is done by at once pinning up to dry about two feet away from the fire, so that it will dry in about an hour. But when a weak print turns up, all the chromic acid available will be required, so that this must be

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left between the blotting paper for, say, one hour before being hung up to dry, thus giving the acetic acid time to do its work. The prints called normal will vary slightly, so that they remain between the blotting paper from fifteen minutes to half an hour, according to whether they incline toward the weak or the strong side.

STEPS: FROM A BUSINESS POINT OF VIEW.

HOUSES with steps, says the editor of the *British Journal of Photography*, leading up to their front doors are healthier than those without. If statistics were collected in each case, and compared, it would be found that there is not only less illness, but also that spirits are higher, and life longer, in the former than the latter. The retort might certainly be made that it is naturally the healthiest who would have the margin of strength necessary to climb the steps and the hillsides upon which high-perched houses are found. Still the fact remains, let cause and effect arrange themselves as they may. The same applies to the photographer in his town studio, necessarily high placed to catch the light. He is better off than workers in other directions on the street level. The consideration should add somewhat to the measure of his philosophic content. At the same time it must be admitted that, in general, steps, or even a step, are not regarded as an advantage in business premises. On the contrary, every effort is made to do away with them. People were either stronger in past days to mount steps, or there was more individuality about the shopkeeper and his wares that overbore their disadvantages. The forces that have planed down business individuality to the present-day orthodox level have also planed down the steps—or at least reduced them to as little appreciable a grade as possible. In the country it is in many cases possible for the photographer to be in line with his fellow tradesmen in doing away with steps. The studio can be in the open garden, with a pleasant flower-bordered and aromatic pathway leading to it. But they are the exception, and it is to the general run of town studios at the heads of staircases that we would refer. The necessary steps are a business drawback to all customers, especially so to weak and to stout people. On the face of it, it seems a condition of things that must be accepted as irremediable. When looked more closely at however, the problem is not so hopeless. The actual height of the studio cannot be altered, but its apparent height to a hesitating customer looking up the staircase can. Now, most people will be ready to admit, as the result of their everyday experience, that there are stairs and stairs. One flight is attractive, and the other is not. They would prefer going up and down the one twice over to going up the other once. In what does the superior attraction lie? Being intent upon practical hints that can be carried out without any great expense, we must leave important structural considerations out of the question. Otherwise, we might point out that the most important high qualities are shallow steps and frequent broad landings.

As existing premises cannot be taken down and rebuilt for the sake of the studio at the top, we must accept the staircase as it is and as being of the ordinary type. In the first place, it is eminently important to have plenty of light falling upon it. If an additional window can be got for the purpose, it will pay well to get it. Where impossible, existing light should be given the best possible chance, by light and airy paper or paint. Most staircases have a window at the top, the centre panes filled up, as a rule, with orthodox transparencies of mediæval scenes, or saints, and the smaller side panes glazed with deep blue or red. Too much light is absorbed, and what passes through is of the wrong color. The scheme being to produce a light and an airy effect, and so a cheerful acquiescence in the step-mounting in the mind of the customer, everything should fall in with it. The saint's true place is in a church window; the mediæval scene or group in that of the ancient country seat. Both are out of place in a window at the head of a commercial staircase. Transparent posi-

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tives of local scenes might with advantage be substituted by the photographer himself, They will more readily claim the interest of the climber, and tend to make him forget the steps. They might, in addition, be made to add to business, for many customers have windows in their own houses looking out upon adjoining roofs and tiles. The borders of red and blue glass should also be taken out, and replaced with canary-colored. This gives a much cheerier light, and produces in dull weather a sunshiny effect. Having admitted as much light as possible, it should not be allowed to disclose dust and dirt.

It may seem unnecessary to call attention to such a fact, but all who have to do with stairs know well the attraction they have for dirt and how difficult it is to keep them clean. Many, if not most, of the customers are ladies, and, naturally, dressed in their best for the occasion. The disagreeable dread of soiled skirts should not be added to the inherent drawbacks of the stairs. Not the least of these drawbacks to timid and elderly folks is the dread of slipping and falling. To overcome this, mat-surfaced India-rubber treads to the stairs would give the confidence of a secure foothold. A hand-rail would add to it in a firm hand-grip; not the usual baluster rail, so broad and highly polished as to be of more ornament than use, but one that can be easily and effectively gripped. The brass tubes, two inches or so in diameter, fitted at the sides of companion-ways in ships, are very suitable for the purpose, having doubtless been evolved as the best under the difficult conditions of step-mounting and descending upon the yielding foundation of the sea. It may appear a bit far-fetched to go so far, but it depends upon the point of view. That of the alert young man about to confidently descend a flight of steps is different from that of the portly matron with a skirt and a couple of children to attend to as well, or of the heavy-weight of the opposite sex, who has not seen his boots when walking for the past ten years. Yet both the last have money to spend in photographs, probably more than the smart young man. Then there are such things as rheumatism, sciatica, anæmia, and so on, afflicting those whose avoirdupois is normal. All would welcome firm and secure hand and footholds. As it must be a long staircase —as well as a lane—that has no turning, and in the former a landing at it, it should be made as far as possible an agreeable break. A vase of fresh flowers or a case of ferns is very grateful; so is a pretty picture, or, better still, the offered comfort of a chair. Finally, and as the most important point of all, it is most advisable to go up and down, wherever possible, with the customer. A little cheerful conversation, with a light apology, suitably introduced, for the stairs, mentioning their inevitability, and why, in town studios, will reduce the length and steepness of any staircase. The attention will be appreciated, the aid of an arm to an elderly man or woman, or a hand to a child, still more so. Indeed, there are so many possibilities in this direction that we are almost inclined to say that a man gifted with common-sense and the saving touch of a slight courtliness of manner to appropriately carry off the practical expression of a kindly dispositition might find a flight of stairs not a detriment, but a powerful aid to business.

THE CHOICE OF A REDUCER.

The average careless worker is more given to reducing negatives than to intensifying them. Not a few workers look on intensification as more or less of a gamble where they may strike a successful result—or disaster. Reduction, on the other hand can often be attempted in a very chance fashion. If, however, good work is to be done, the photographer should know how to choose his reducer, for the same one is not the best for all classes of negatives, and a spoilt plate is by no means a rarity.

The theory of a reducer is simple. First the silver is converted into some compound, and then the compound is dissolved. If the chemical which attacks the silver image is mixed with the chemical that dissolves

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the compound thus formed we have a single-solution developer. The single solution is simpler and more useful than the double one, in which first the negative is bleached and then the compound dissolved out.

The most popular reducer—as it is the simplest and most convenient in working—is Farmer's. This is a solution of hyposulphite of soda and potassium ferricyanide. The latter converts the silver into silver ferricyanide, and this is dissolved out by the hypo as fast as it is formed.

The hypo in this reducer should be used in a fairly weak solution. One in ten is often used, but one in twenty is a safer strength. Mix the ferricyanide also in a 5 per cent. solution, and when a negative is to be reduced add a few drops of the ferricyanide to the hypo. This must be done immediately before use, for the solution will not keep many minutes. The working strength of the solution may be practically judged by its color. A solution of a pale yellow is sufficiently strong for most negatives; if deepened to orange it is too strong. Farmer's reducer has a tendency to emphasize contrasts, for it attacks the faint details in the shadows before touching the denser high-lights of a negative, and the stronger the reducer is the more is this done. An under-exposed, very dense negative should not be treated with this reducer; on the other hand, a flat, over-developed negative may be reduced with a solution of an almost orange density. A negative with fogged shadows may be wonderfully cleared by dabbing it with a tuft of wadding just moistened with a fairly strong solution. Farmer's reducer has the fault of staining—with a stain which is not easily got rid of. This may be caused by letting the solution act on the plate too long. If considerable reduction is necessary it is well to leave the negative in one solution for five minutes, and then remove it to a second freshly-mixed solution. Or a reddish stain may be caused by using old discolored hypo, instead of clean, newly-mixed. The hypo is, in practice, usually taken from the fixing bath. This must be a plain and not an acid bath. Occasionally a plate will stain if placed in the reducer directly from an acid-fixing bath.

Farmer's reducer owes its popularity to its simplicity as much as to its workmanship. But it is at times an advantage to have a ready-mixed one-solution reducer on hand, instead of having to do the simple mixing which the non-keeping property of Farmer's necessitates.

A reducer which will keep practically indefinitely if kept in the dark is: soda sulphite, ½ ounce; potass. ferric oxalate, ½ ounce; water, 6 ounces. Crush the salts fine and dissolve by shaking, then add 90 grains of oxalic acid. Shake until the solution turns green, then decant into another bottle, leaving any undissolved oxalic acid in the first bottle. Then add 2¾ ounces of hypo made up to twelve ounces with water, and the reducer is ready. In some towns it may be difficult to obtain the potassium ferric oxalate. If so, substitute for this, ferric chloride in crystals, 150 grains; and potass. oxalate, 265 grains. This solution is right strength for negatives without dilution. If mixed with hard water a milky precipitate may be formed. This should be allowed to settle, and the solution then decanted off. But if used with the precipitate it does not injuriously affect the negative. In addition to its keeping properties this reducer has other advantages. It is not liable to stain, but on the other hand will often remove developer stains; and it is not affected by traces of acid in the negative, which may indeed be placed directly in it from an acid fixing bath. It is a very even reducer, affecting the contrast in a negative less, perhaps, than any other reducer, and not unduly attacking the precious shadow details.

When Dr. H. Marshall introduced persulphate of ammonium to the photographer he did him a good turn. Many American photographers tried this when it was first boomed, and were severely disappointed. The trouble was that chemists did not supply the right chemical. Bisulphate was substituted, and this not through any wish to deceive. Indeed if a chemist to-day offers you persulphate from his stock, be very careful to explain to him exactly what is wanted, and that it is practically a new chemical so far as he is concerned, not the usually considered identical bisulphate. Persulphate's special advantage is

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that it first attacks the high lights, and so is the antithesis of Farmer's formula. A very dense negative will have its dense parts considerably reduced while the shadows are practically unaffected. If used too strong, persulphate may attack the films. I use a 3 per cent. solution, or never more than 4 per cent. The plate should be well washed from hypo or the action of the reducer will be considerably slowed; and it is well, though not absolutely necessary, to fix the plates for a couple of minutes after reducing. Reduction commences immediately the plate is immersed, and is stopped by removing the plate into a 10 per cent. sodium sulphite solution, or by washing vigorously in water. When a very slight reduction is advisable use a solution of 10 ounces of hypo solution, 1 in 4, with 45 grains of iodide of potassium added. This acts very slowly and spares the fine detail; it is very useful where the required reduction is so slight that a stronger reducer would be uncontrollable.

There are several "cyanide" reducers. I have worked with them, but do not find any merits in them which are absent from the reducers which I have more fully described.

The potassium cyanide is a rather unpleasant poison and may lead to accident; and the bath gives off just a suggestion of prussic acid.

Also, I have discarded two-solution developers, finding that single baths give me all I want and more simply.

A little care is necessary with reducers; always keep the solution gently flowing over the plate, or a mottled uneven result may be obtained.

THE BUFFALO CONVENTION.

THE National Convention will be held at Buffalo, N. Y., August 5th, 6th, 7th, and 8th. Only a few weeks remain for preparation. We urge our readers to make the most of these few weeks. It is the duty of every professional photographer, big and little, to attend the National Convention, but it is not always easy to get away from business for a few days without preparation. It is the duty of every member of the association to make a display of his best work at the National Convention. This duty is especially urgent since the competitive divisions have been removed and the exhibition is wholly on the basis of merit. But you cannot do justice to yourself unless you take the time necessary to prepare an exhibit worthy of you. Therefore we urge all members of the P. A. of A. to prepare without further delay or procrastination: (1) An exhibit of their work for the convention; (2) to attend in person. Buffalo should be the Mecca toward which American photographers should journey in August.

We publish herewith the official programme of the convention. It is worthy of your close attention. It tells you what the officers of the association have prepared for your instruction and pleasure. It offers you the best and most profitable investment of the year. Read it over, and then bind yourself to go to Buffalo, August 5th, and get all the good ideas let loose at the convention.

PROGRAMME.

Tuesday, August 5th—Morning Session.

Opening of convention.

Address of welcome.

Reading of communications.

Reports of committees.

Address by Professor A. H. Griffith, of Detroit.

Annual address by the President of the P. A. of A., George M. Edmondson.

Afternoon Session.

Reading of communications.

A talk by C. H. Smith, of Rochester. Subject, "Why?" (Twenty minutes.)

A practical studio talk. A photographer-demonstrator's views on the "little things" that mean success in business.

Lecture by Lucius W. Hitchcock, of Buffalo. Subject, "Practical Composition of One, Two, and Three Figures." (Forty-five minutes.) Mr. Hitchcock will, in his lecture, show how one sort of line and arrangement is better than another, and then give the right principle along which to

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work to do original things rather than copying the good things of others.

Wednesday, August 6th—Morning Session.

Manufacturers' and dealers' day.

There will be no meeting on this day. The members will devote the time to inspecting the exhibits and purchasing goods.

Thursday, August 7th—Morning Session.

Reading of communications.

Report of Treasurer.

Report of Secretary.

A talk by C. M. Hayes, of Detroit. Subject, "Good Business Methods for Photographers." (Twenty minutes.) A general business talk that will be of value to the fraternity. Do not miss it.

A talk by William J. Edmondson. Subject, "How to Make Good Groups." (Thirty minutes.) This talk will be illustrated by large tracings from photographs introduced in such a way as to demonstrate forcibly the practical application of each point considered.

Selection of next place of meeting.

Nomination of officers.

Election of officers.

Afternoon Session.

Address by Elbert Hubbard, of East Aurora, editor of the *Philistine* and *Little Journeys*.

Lecture by Professor O. W. Beck, of New York. Subject, "Art Possibilities in Commercial Portrait Photography To-day." Professor Beck will show in a practical way how the photographic portrait can find a new life in art. Professor Beck's wide experience before photographic conventions has taught him the actual needs of the fraternity to-day, and he will not only give thorough instruction in art, but he will show how to apply it commercially.

Friday, August 8th—Morning Session.

Unfinished business.

Talk by Morris Burk Parkinson, of Boston. Subject, "The Idiosyncrasies of the Customer, and a Word about Faking." In the afternoon the members of the association will be given an excursion to Niagara Falls.

The Executive Board.

RAILROAD AND HOTEL RATES.

A rate of one and a third fare on the certificate plan has been secured for the convention of the Photographers' Association of America, to be held in the City Convention Hall, Buffalo, August 5th to 8th.

Please observe the following directions:

Tickets at full fare for the going trip may be secured within three days (not including Sunday) prior to and during the first three days of the convention.

You can obtain your ticket not earlier than August 1st, and not later than August 6th. Tickets good returning to August 12th.

Be sure that, when purchasing your ticket going, you call for a certificate. Do not make the mistake of asking for a receipt. Call at the station in good time for the agent to make out the certificate.

Certificates are not kept at all stations. If you inquire of your agent you will find if he can supply them, and if not, he will inform you of the nearest station where certificates can be had.

You will purchase your ticket to this place, and there get your certificate and ticket to Buffalo.

Upon your arrival at the convention deposit your certificate with the Treasurer, F. R. Barrows, who will have it signed by the transportation agent and return it to you.

It has been arranged that the agent of the transportation company will be in attendance on August 6th and 7th to validate the certificates. Only on these days will the certificates be signed, so all tickets must be in the Treasurer's hands on these days.

When you wish to return, present your certificate at the station, and you will be furnished a ticket at one-third fare home.

Hotel Rates.

Genesee Hotel (headquarters of Executive Committee): American plan, $2.50 and up per day; European plan, $1 and up per day. Baths, 50 cents per day extra.

Iroquois Hotel: European only. Rooms, $1.50 and up per day; rooms, with bath, $3 and up per day.

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Tifft House: American plan. One or two in a room, $2.50 and $3 per day; with bath, $3.50 and $4. Where more than two use same room, a discount of 20 per cent. from these prices.

Hotel Broezel: American plan. Single, $3, and two in room, $2.50; with bath, $3.50 and $3.

Castle Inn (Fillmore Mansion): Two in room, $1.75 to $2.50; one in room, $2 to $3.

Many other hotels at various prices.

A WORD FROM SECRETARY REEVES.

Never in the history of the P. A. of A. have the prospects for a successful convention been more promising.

The pledges for the exhibit of pictures indicate that there will be a large display of pictures from the best workmen. The art gallery will be full of good things from end to end, and will offer a schooling of great value.

The amount of floor-space engaged by the manufacturers and dealers gives assurance that they will make this feature of the convention interesting. They have the second day all to themselves, and will make a fine display of their wares, and entertain you well.

The hall fills every requirement. It is large (being 150 by 200 feet), well lighted and well ventilated. The room in which the meetings will be held is on the second floor, and is ventilated on two sides, and will be found comfortable.

The entertainment of the members is provided for in a pleasant way, one feature of which will be a trip to Niagara Falls. This trip is free to members, and is arranged so that a systematic viewing of the Falls can be had in the shortest time, or you can stay as long as desired.

The programme will be found interesting and instructive. It has been the aim of the committee to make this convention thoroughly practical. The lecturers are of the best, and their subjects on practical lines, and they will be illustrated.

Every photographer owes it to his health to take a vacation once a year. He owes it to his brother-workmen to be sociable. He owes it to his customers to attend the conventions and learn all the new things. He owes it to his business to be progressive.

All these demands will be met by attending the conventions. And, in addition, your work is wanted for your own comparison and for the good of the cause. Come, profit, and enjoy yourselves.

Remember, City Convention Hall, Buffalo, N. Y., August 5th to 8th.

Respectfully,

C. R. REEVES,
Secretary.

819 MERIDIAN ST., Anderson, Ind.

COMMENTS ON THE PORTRAITS BY ROCHER.*

I.

IN looking over the portraits by Rocher, the first thing that struck us was the superb lighting and modelling of the figures; none of that loss of detail in the lighted side of the white drapery so often seen in some of the work of the present day, but perfect modelling and gradation everywhere, from the highest light to the deepest shadow. It would be hard to find a collection of pictures made at the present time that were better in this respect, and Mr. Rocher must certainly have been a master of lighting, exposure, and development. From the stand-point of crispness and brilliancy they are hardly as good as the best work made now. There is a certain slight fogginess or thinness about them which is, I suppose, due to the process—wet plate. [No; it is due to the engraving process.—ED. W. P. M.]

Taking up a few of the pictures individually, let us turn first to the frontispiece and the lady looking at the picture on the wall. These two pictures have more in them than some of the others. They tell a story, or, rather, arouse our interest and make us imagine a story. In the second we wonder whose portrait the lady is look-

* The concluding paper of this series, which deals with the examples of portraiture by Henry Rocher, given in our March issue, will appear in our next issue. The award will also be announced in that issue.—ED. W. P. M.

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ing at. Is it her father's or mother's? If so, how many remembrances it may bring to her mind! She remembers, perhaps, the days when she was a child, and the old home far away. Or is it a portrait of her lover? We think it might be; she looks so smiling. If so, it is not hard to imagine a romance in connection.

Again, in the frontispiece, we wonder what subject engrosses the ladies' attention so deeply. Is the lady on the left explaining a trick at cards? or is she pointing out the card with which she beat her opponent in the game just ended? Whatever it is the artist has left us to guess for ourselves. The scope left for imagination is one of the things that makes us interested in this picture at once, and we think it would pay the workers of nowadays to make more of their pictures tell a story. The lady to whom the explanation is being made is in a quiet, restful position, and the expression of her face is attentive. The other looks just as one would who was explaining anything—watching the face of her friend to see if she were grasping the full meaning of the explanation, and pointing with her finger to the particular part she wishes to emphasize. We feel that Mr. Rocher made a good choice of models when he selected these two ladies for this picture. They seem to have understood just what he expected of them.

Notice the background. A medium gray, light, sketchy interior design, almost entirely the same in tone, giving strength to the lights, and darks also, and harmonizing the whole into a beautiful picture. Imagine for a moment that a plain background had been used. How tame and empty the upper half of the picture would have looked. But in Mr. Rocher's background a landscape painting is just hinted at in the panel above the ladies' heads. This seems to give the picture more perspective, besides agreeably breaking up the space in the upper half. The vertical lines of panel also help to lead the eye upward from the rather monotonous line of heads.

While we are on the subject of backgrounds we would say that Mr. Rocher seems much ahead of most workers of that day in his choice of grounds. We see nothing of those gorgeously-painted affairs, with perhaps a heavy curtain thrown in, which were a picture in themselves, and drew off so much attention from the subject; neither do we see the abnormally plain background so much in use at the present day, which lacks variety, and almost always leaves too much unbroken space around the subject.

Notice the cabinet at left of picture. How softly it blends with background, almost seeming to form a part of it. Nothing obtrusive about this. And again, the table at the extreme right. There seems to have been something needed here to give the picture balance, and the table (and stove) do it effectively. Another thing which affects the eye pleasantly is that circular line made by the bottom of one lady's dress (the one on the right side) and a part of the overskirt of the other.

Notice also the rug on the floor. This was composed of sections of light and dark fur. Had the negative been at all hard these would probably have looked spotty, but in this picture the fur is so perfectly rendered that the rug looks lovely; in fact, we feel it looks better than the carpet would have done.

Turning to the next picture we see a lady who appears to have just entered the room through a door in the background. We feel that there is not enough restfulness to this picture. She somehow looks as though she were going to fly away. Several of the others have this same trouble —*i. e.*, too much striving after effect.

We do not like the lady looking at a picture on an easel. The easel makes two disagreeable oblique lines running out of the picture and a light space on the left edge, which give it an unfinished appearance. The lady's dress is too far spread out, and the furniture looks too heavy and crowded.

In the next picture we have a rather stout lady standing in an animated pose and bending forward as though listening. We wonder what Rocher's motive was in posing her this way. The lines of her figure are flowing and graceful. In looking at this and some of the other pictures of stout ladies we wonder if a head-and-bust picture would not have been more satisfactory. We also wonder why the retoucher did not make the arm a little smaller from the elbow up, so it wouldn't look so porky.

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In the portrait of a lady resting her arm on a stone bench we have a picture that to us is very satisfactory. Nothing grinning or staring about this face, but the expression is calm and intelligent, and the hair arranged to suit the profile view. The crowding of furniture accessories and highly-figured carpets, which mars so many of the others, is absent in this. Note how curving and graceful the lines of the figure are, and the lines of the rustic seat are curving, too. In fact, there is only one straight line in this whole picture (*i. e.*, the back of seat), just enough to give the eye the pleasure of variety. See how the further side of seat is shaded off, blending into the background and giving a more pleasant effect than if the seat had been allowed to run out at the side. This seat seems to fill up just enough space, giving balance and shape (triangular) to the composition; and the light sketchy design of flowers in the upper right of background airily breaks up what might have been an uninteresting space. As the lady stands there, easily leaning against the seat, we feel that *she* is the centre of attraction, and that all the rest (although necessary to the make-up of the picture) is secondary.

We cannot close this sketch without making some reference to Mr. Rocher's masterly handling of the arms and hands of his sitters. Sometimes they are made to hold a fan or book, at others they are arranging a bit of drapery or a bouquet of flowers, but in every instance they are given something to do.

GORDON HATFIELD.

TUSKET, Nova Scotia.

II.

In looking over the examples of Mr. Rocher's work in the March number of the MAGAZINE one is impressed at once by the individuality of the man, and yet the results just lack being real and perfectly satisfying. Although the subjects are treated in a somewhat conventional style, there is a delightful charm in the various and happy conceptions which, for the greater part, are carefully carried out and well executed. Then again, as one studies them, there is the feeling that some are self-conscious, posing, thinking only of an attitude, which tends to weaken and make the results rather insipid.

From a technical stand-point there seems little to be desired in these examples of portraiture, which, however, must be partly credited to the peculiar and indescribable qualities of the collodion process. It seems to lend itself in a charming manner to the rendering of soft white draperies and beautiful textures, which is quite distinct and unattainable with the dry plate. It may not be out of place to say here that we cannot agree with the idea which is prevalent among a certain following of the "New School," that the technical part of the photographic art be set aside. Every first-class painting will, upon examination, be found to contain a considerable amount of detail, which is necessary. With the further advantage of color in favor of the painter, is it not far more important that the photographer, with his limited language, should carefully guard against running into black smudges and fuzzy extremes?

The principle of good pictorial composition has no other aim than aid in the production of a pleasing picture. It may be defined as the selection, arrangement, and combination of natural objects in such wise as to give a pleasing presentation of forms and gradations, to tell plainly the story of the picture and to embody its sentiment.

We think this rule can be strongly applied with credit to the first example (frontispiece) of Mr. Rocher's work. It has refinement, and yet natural simplicity, charmingly presented—a simple motive cleverly managed. It shows evidence of the true artist, the man with heart and soul in his work, not the mere "typographer." There is a proportionate arrangement and unity of the different parts of the group, an exercise of judgment on the part of the artist as to the fitness of position, as to harmony of relation, proportion, color, light, and a skilful uniting of all the parts into one perfect whole, which makes it pictorially pleasing. Notice the broad handling with good balance of masses gradating from darks to middle to higher tones. The background might be less sharply defined against the figures, also the same value of drapery jutting out of the picture space is slightly annoying and should be lowered in

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key or kept within the space. On the whole, we think this the best example of the series.

The portrait of a lady entering the room is rather obscure in motive, and the conception, on the whole, is not so good. The ugly bunching of train in the half-open doorway, with its sharp lines, in conjunction with other accessories, mar the effect. There is the same pleasing delicacy of detail in draperies and good balance of light and shade.

The portrait of a lady looking at a picture on an easel lacks unity in composition and harmony of relation. There is an unpleasant breaking out of bounds by a line drawn from train in lower right-hand corner to the easel in upper left. The accessories are obtrusive, and the whole thing not quite in keeping. The figure itself is expressive of much grace and naturalness in pose.

In No. 4 we have the fault of a huddling together of miscellaneous studio properties, although in a general way they are kept subordinate to the subject. This is not a portrait pure and simple, but as to the motive or idea to be conveyed it is not very clear and does not tell plainly the story of the picture. The subject is self-conscious and thinking only of an attitude. A very bad feature of this subject is the stiff and unnatural position of the right arm, and would seem to be anything but part of the human figure. The feeling for tone, color values, and technique in general are very good.

In contrast to the latter example, notice in the portrait of lady at a cabinet the pleasing and restful lines. No affectation, but perfectly natural in pose. With exception of rather strong straight line of light in front of figure, the spots of light are placed with nice appreciation of effect. We have the central and predominant light (except, as remarked before, the strong line in front of figure), and from this a gradation toward the edges of picture, ending in deep tones. This is, without question, the most satisfactory example of the four, and think it would be difficult to surpass in the way of technique.

In the portrait of lady with roses the conception is good, but not carefully carried out. The idea could be presented to greater advantage in a more simple manner. It is overcrowded in the picture space, and the line at back of subject is unpleasant by having two sharp angles cut into the figure.

The portrait next to the above lacks interest in a general way. The figure is composed well and shows a good sweep of drapery, but the sharp lines of the accessories are annoying and would be improved by plainer setting.

The mawkish sentiment displayed in the portrait of lady in a velvet dress we do not care for, and soon weary of it.

In the next picture, cover up about one-third from right, swing train into the picture space, take out chair, or at least the shawl, and we have a much more pleasing result. This is a very clever and original idea.

The full-page portrait of a lady watching at the door of a room is a beautiful example of technical photography in every respect, and especially in the rendering of flesh-tints against white drapery. As a portrait, however, it lacks repose and dignity. It is a most painful and trying attitude for a subject of such beauty of face and figure, and one cannot help wishing it had been treated in a more dignified manner. Too much in it, and the cry comes up for more simplicity.

"Simplicity is the highest form of art, and requires a highly refined and intelligent mind and a finely cultivated taste." As to the motive or idea to be expressed, we feel that we have done penance enough on it, and leave the question for someone endowed with more patience.

The lady posed with a fan is simple in arrangement and fairly well carried out. The ungraceful line at back of the figure and the placing of the figure too low in the space are slightly annoying.

The tragic portrait which follows this is the usual result that has all along marked the photographer in his attempts at dramatic portraiture, for it is literary in motive, not purely pictorial, and belongs properly to the stage. It is very rarely that things of this sort are successfully done, but as a usual result we have very crude and trying effects.

The two "outdoor" portraits are two very satisfying examples of photography

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pure and simple. No confusing motive to unravel, but a story plainly told—portraiture at its best. There is atmosphere about the figures, they are well disposed within the picture space, and good in composition, tone, and gradation. Notice in the second one how distinctly the figure predominates, and yet without any hardness of edge; how central the mass of light, with its delicate catch-lights and marvellous rendering of textures; how the whole is enveloped by the beautiful pearly tints. Indeed, there is an indescribable charm of color values about this example that one only comes to a full appreciation of by careful study. In the last three examples the figures are not disposed so well for the panel style of portrait, being crowded too much from side to side. They are too studied, too obviously posed, and lack spirit. These examples contain the usual good photographic qualities.

On the whole, we think these examples of Mr. Rocher's work most interesting, and they should afford much pleasure and profit to the up-to-date photographer. We must admire genius for what it succeeds in doing, not for what it fails to do, and the photographer who does one thing well is, nevertheless, entitled to consideration. Perfection is not found among photographers any more than among painters or doctors. It is not strange that Mr. Rocher failed of perfect results, but that he even attempted and so far succeeded under the trying circumstances attending portrait-making in the days of the collodion process.

It takes years before we come to a full appreciation of art, but when at last we have it we will be possessed of one of the purest, loftiest, and most ennobling pleasures that the civilized world can give.

"REMBRANDT."

A NOTE ON "FADS."

EDITOR OF WILSON'S MAGAZINE,

SIR: Fads in fashion, art, and often in books, in fact, fads of every kind, are most always manufactured. A peculiar and exasperating fad is the attempt, which has been in a degree successful, to make the public believe that the worst photography is the best art. It is very trying to one's patience to see, for instance, one of the leading journals of the country publishing "new school" and "advanced art" in photography, illustrated by pictures that have not one redeeming feature. They are neither well posed, well lighted, well designed, nor in any degree technically good. The only protest which I have seen, and which really promises to be the dawn of better things, is in the *Evening Post* of a recent date, in which it speaks of this eccentricity in the following words: "Mr. Blank carries the practice to the verge of absurdity. . . . One peculiarity of the new school's work that will impress the most casual visitor is that brilliant light in a picture, according to these views, is to be avoided at any cost. Apparently every person represented, whether it is a man burning the midnight oil over his books, a child at play at the seashore, or a nymph bathing in some sylvan pool, is portrayed during the last minutes of twilight. Deep shadow, and no end of it, seems to be the motto of the club."

As I have before expressed it, there never was a fanatic or an extremist on earth who did not have some bright ideas in connection with his idiosyncrasies, and it is true that we have been giving too much attention to detail and to very sharp pictures; but simplicity of style and a softness can be and has been accomplished without running to the extremely absurd specimens which have been pinned upon the walls of recent exhibitions, and raved over as the late lamented Oscar Wilde did over his sunflower as the perfection of floral beauty. I believe the thing is dying, dying hard, but nevertheless dying.

GEO. G. ROCKWOOD.

Wilson's Cyclopædic Photography, with its 2500 references to as many different subjects, covers the theory and practice of photography more completely than any other single book extant. Price $4.00, postpaid.

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HANDS.

"He Always Makes My Hands So Big."

ASK a really careful photographer, and he will generally tell you that hands are the most troublesome objects to pose. Feet give little trouble, compared with hands, for here the question may so often be evaded. Feet, except sometimes in the case of children, are always at least covered, and in the more pictorial sex of sitters the shoes themselves are hidden, or all but hidden, by the dress. But not only are the hands not hidden; they are often an essential part of the beauty of a person or a portrait; and the rendering of them is a problem which must be honestly grappled with. I have found in my experience that, given a woman with well-modelled arms and hands, and in evening dress, the satisfactory posing of the hands is more difficult than the obtaining of a good poise and expression to the head and face. I do believe, however, that to attain a certain measure of success becomes easier every year, for people are becoming more and more used to photography, as we on our side are, I hope, becoming more tactful in our handling of them. For the chief obstacle in the past has been the nervousness of the sitter, produced in large part by her knowledge of the fact that the camera is not lenient toward conventional ideas as to the size of hands and feet. Thanks, I suppose, to our European origin, we look for small size in the extremities of a well-bred person, because it is work which makes hands and feet large, and aristocracy inclines to despise workers. Painters—those superior persons—have always been apt to work to conventional and flattering ideas, rather than to be truthful, and so have drawn hands smaller than fact would warrant. The photographer, thanks to the shortcoming of his lens, has always tended to err in the opposite direction. Hence it it is that a sitter so often complains, and sometimes with justice, that "he always makes my hands so big!"

The plan has often been, in many studios (including my own), to dodge the question by making head and shoulder portraits. But not only is this a rather cowardly and inartistic subterfuge; it is a bad business move, for a sitter with pretty hands will look for a half-length portrait, and if she be in evening dress she will demand it—or a full-length. It is possible to let the sitter do her own (unconscious) posing, but it is also possible to tackle the difficulty boldly, arrange a beautiful pose, and let the sitter hold that pose, naturally and gracefully, until the exposure is made. Many successful examples of this have appeared in former issues of the MAGAZINE, notably some prints by Mr. F. G. Schumacher, which I have studied again and again.

Some sitters—and they are becoming more numerous—forget about their hands, and pose them naturally. When I get such a sitter I commence by ostensibly making an exposure for the head only, but in reality, making a half-length. I then arrange posed hands, and by a few words of explanation as to why I want one partly hidden, why I want the hands turned sideways, etc., can get the sitter to hold the pose naturally, without either tension or limpness, until the exposure is made. Nervous people sometimes severely try one's patience; for the moment they are arranged they want to pat their hair or rearrange a ribbon or do some other slight thing which only results in disarranging the pose. With such sitters the best plan, and one which generally works, is to put something into their hands. It may be a bit of work, a paper, a fan, or a flower—anything will attain the purpose, but it must be something suitable to the person and dress.

In regard to the size of hands there is much more variation, I think, than in the size of faces. Some day, perhaps, there will come a fashion of trying to translate the character in hands, just as at present a certain amount of character is looked for in faces, and not mere prettiness. At present we must avoid giving too much prominence to the hands, and must keep their size in due subjection. The sitter can control this to a certain extent by the choice of her dress. Hands look much larger in contrast with dark material, being

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so much more conspicuous than when resting on some light-colored surface. With painters the plan often is to tone down the hands to a lower key. This makes them less aggressive, but in portraiture I have more than once faced the complaint that hands were washed before visiting the studio; the toned-down hands having suggested griminess to the sitter. Hands, or one hand, may be used very successfully to support the head—in sitting postures. Almost any difficult hand can be treated this way if the edge or the inside of the hand faces the camera. By slightly altering its position, or by turning the head, a part of the hand can be concealed, and the various possible arrangements of the fingers are numerous—each person adopting his or her distinctive one. A hand turned sideways or partly sideways to the camera is a good way of displaying a well-formed thumb holding a paper. The fingers of a hand are usually in repose when being photographed, but they are not necessarily arranged with geometrical precision. One may be a little in advance of the other in a half-closed hand; flexion of the wrist often improves a stiff-looking hand. There is a very bad pose seen sometimes when a full face is taken of a person seated in an arm-chair. The sitter's arm rests along the arm of the chair and the hand hangs down in front, as though broken at the wrist. Hands may often be partly hidden in the dress.

The real first cause of the idea of photographic big hands is surely the studio lenses which have been used. When we push our cameras to within six feet of our sitters we must expect to get distortion. When we get down to longer focus lenses, perhaps of the telephoto type, we shall soon find that "big hand nervousness is a thing of the past."

THE NEBRASKA CONVENTION.

THE Thirteenth Annual Convention of the Photographers' Association of Nebraska met at Omaha, May 13th, under the leadership of President T. M. Mackey. The first session, called to order at 8.30 P.M., May 13th, was a sociable reunion, enlivened by music, refreshments and good fellowship. The attendance was larger than at any other previous meeting.

On Wednesday morning, May 14th, Mr. John Pringle, of the Cramer Dry Plate Company, gave a practical demonstration of posing and lighting. This was followed by a business session at which various committees were appointed and the Treasurer made his annual report, showing a balance of $178 in the treasury. Several informal talks of a practical nature were given by members present at this meeting, a talk on "Bad Framing," by Mr. Hoyle, being particularly well received.

At the afternoon session Mr. Hart, of the Eastman Kodak Company, demonstrated the use of bromide paper, and Mr. Harry Fell followed him with an art talk. The meeting then adjourned until 8 P.M., when Professor L. Wallace, of Omaha, delivered an interesting lecture on the "Advantages and Limitations of Photography as a Means of Expressing Artistic Thought."

Thursday, May 15th.

At the morning session Mr. George Benson, of the Seed Dry Plate Company, gave a demonstration of posing and lighting. He was followed by Mr. Harry Fell, of the American Aristotype Company, with a characteristic talk on the handling of aristo-platino.

At the afternoon session the following officers were elected by acclamation to serve for 1902-03; President, Alva P. Townsend, Lincoln; First Vice-President, O. B. Reeder, Beatrice; Second Vice-President, J. F. Wilson, Pawnee City; Secretary, E. R. Tyson, Nebraska City; Treasurer, W. P. Fritz, Fremont.

The location for the convention of 1903 was then discussed, and Lincoln was chosen by popular vote. Mayor Moore was then introduced and made an address of welcome to the conventioners, expressing his regret that indisposition had prevented his attendance at the earlier meetings. President Mackey responded, after which the

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meeting adjourned. At 8 P.M. the photographers visited the studio of Mr. George W. Lininger and spent a most enjoyable time.

Friday, May 16th.

The day opened with a demonstration of posing and lighting by Mr. Corning, of the Hammer Dry Plate Company, given at the Allen & Sandberg studio.

At the regular business session the report of the Treasurer was formally adopted and resolutions expressing the thanks of the association were voted to all who had helped to make the convention attractive and successful. These resolutions were most comprehensive, and included everyone concerned, from the Mayor of Omaha to the retiring officers of the association.

The award list was then announced as follows:

Grand Portrait Class. Charles Townsend, Muscatine, Iowa, gold medal.

Class B. First, John F. Wilson, Pawnee City; second, Paul Schmadlewsky, Seward.

Class C. First, G. B. McGill, Albion; second, C. Vail, Arlington.

Interstate Exhibit. T. M. Mackey, Superior.

Sweepstakes. Estelle Payne, Hastings, loving cup.

Standard Class. Estelle Payne, gold medal; H. Lancaster, Omaha, silver medal; Alva Townsend, Lincoln, silver medal.

Specialties Class. First, H. Lancaster, Omaha, silver medal; second, C. W. Bonham, Garing, bronze medal.

Children's Class. First, Alva Townsend, Lincoln, gold medal: second, H. Lancaster, Omaha, silver medal.

The display was unusually large and attractive, comprising over sixty exhibits. The Secretary's report closes as follows: "The attendance, the interest taken by the general public and the press was such that we feel that far from being an obscure gathering our annual meeting is an event of prime importance in the photographic development of Nebraska." From this it would appear that, despite the above dry details, the Nebraska Convention was a profitable and enjoyable affair, and not a mere round-up of photographers seeking medals and manufacturers seeking trade.

We congratulate the Nebraska photographers upon their successful meeting, and wish continued success for their thriving association.

EDITOR'S TABLE.

How to Improve Bad Negatives is the attractive title of a useful little book written and published by EDWARD W. NEWCOMB, Bible House, New York. The contents of the book are amply described by its title, and the methods given are said to embody the practical experience of the author. Price $1.50, post free.

WE have received from the VOIGTLAENDER & SON OPTICAL CO., 135 West 23d St., New York, a cleverly written booklet explaining the advantages of the Collinear Lens. We commend the little brochure to our readers as offering valuable information. A copy can be had by applying to the publishers and mentioning this MAGAZINE.

A capital pocket memorandum book for recording the details of exposures when working out-of-doors has been published at 25 cents by SAMUEL G. WOLFE, of Chicago. The arrangement of the exposure blanks is good, and the hints given at the end of the book are very helpful.

G. GENNERT, 24 East 13th St., New York, has placed upon the market a sensitized collodion emulsion for three-color and general reproduction work. Up to the present time negatives for these processes have been made by the old wet collodion method. The new emulsion does away with the troublesome silver bath, is six times more rapid than wet collodion, and is orthochromatic. The introduction of this specialty has long been desired, and it will undoubtedly meet with general appreciation among those for whom it is intended.

WE are asked to state that the prices of GENNERT'S pure sodas for photographic use should be as follows: Carbonate of soda, 25 cents per pound; sulphite of

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soda, 30 cents per pound, and carbonate of potassium, 35 cents per pound. This announcement is intended to correct errors in prices given in a recent advertisement in one of the journals.

DURING a recent outing we had the opportunity to give practical trial to SEED'S Negative Films, 26*x*, and found them in every way as satisfactory as the SEED plates of the same grade, with a great convenience in the saving of weight and bulk. Those whose work calls them out-of-doors should not overlook the advantages offered by these cut films.

THE DORTICUS MANUFACTURING CO., 38 East 20th St., New York, report a largely increased demand for their useful Twentieth Century Finishers. Photographers who have not yet acquainted themselves with this clever helper for the print-finishing department should send for the illustrated circular describing it.

AN exhibition of professional photography is to be held at Dusseldorf, Germany, August 11th to 15th, in connection with the annual meeting of the German Photographers' Union. Thirty-four medals are offered, and the co-operation of American photographers is especially invited. Intending exhibitors should communicate at once with President K. SCHWEIR, Weimar.

THE April number of the *Aristo Eagle*, edited by T. W. PATTISON, and published at Jamestown, N. Y., in the interests of the AMERICAN ARISTOTYPE CO. and American photography, is as interesting and as charming a journal for photographers as we have seen outside of these pages in many a month. We urge the progressive reader to send a post-card to the publishers and secure a copy while the edition lasts.

MR. W. I. SCANDLIN, 345 Sixth Ave., Brooklyn, N. Y., reports that his Business Development Bureau is meeting with a larger appreciation than was hoped for. The purpose of the Bureau is to supply professional photographers with business advice, methods of securing and increasing business, advertising plans and booklets. Such a bureau has long been needed, and we rejoice in Mr. SCANDLIN'S success. If any of our readers feel the need of inspiration and help in the organization of the business end of their studio, they will profit by securing the experienced services offered by Mr. SCANDLIN.

CRAMER'S Isochromatic Plates are enjoying a well-deserved popularity among professionals at last. The professional is proverbially slow in accepting new ideas, but now that he seems to have overcome his reluctance to use isochromatic plates we look for a general improvement in portraiture, where color-sensitive plates offer so many advantages. Three of the best portraits reaching our table in May were all marked "Made on Cramer Iso." The moral is obvious.

JEX BARDWELL MADE HAPPY.—We gladly give place to the subjoined note, which puts on record an act of fraternal kindness which will shine like a jewel in the history of the National Association:

"EDITOR WILSON'S PHOTOGRAPHIC MAGAZINE,
NEW YORK,

"DEAR SIR: A motion was made at the local meeting of the P. A. of A., Detroit, voting the balance ($82.66) left in the local treasury to be known as the Jex Bardwell Fund, payable to him at the rate of $10 on the first of each month as long as it lasts.

"Yours very truly,
"E. DONALD ROBERTS,
"Local Secretary."

We learn from a friend in Detroit that our old friend JEX BARDWELL is at present in a fair state of health and enjoys his usual cheerfulness. For the past year or two his strength has failed considerably, and this, of course, has incapacitated him from work by which he might pay his way without worry. The voting of the Bardwell Fund, as above recorded, was, therefore, as timely as it will be really useful. We commend the Detroit committee for its common-sense and good-will in this disposal of the fund.

If any reader is disposed to lengthen the veteran's days of comfort by sending a check for $10 to this office (marked Bardwell Fund), we will take pleasure in forwarding it to the proper quarter.

AN IMPORTANT CORRECTION.—According to our British exchanges the announcement made in the *New York Herald*, and published in our April issue, to the effect that photographs by EDWARD J. STEICHEN had been accepted by the Paris Salon, was premature. Mr. STEICHEN writes to the editor of the *Photographic Art Journal*: "The photographs I spoke of are not at the Salon. The announcement of it brought on such a fuss and political muddle that it was mutually agreed not to exhibit them."

Reference to our publication of the *Herald's* cablegram will show that we were by no means certain that it announced an accomplished fact. We are confident, nevertheless, that the coveted honor will yet be won—and by American photography.

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PORTRAIT OF A GENTLEMAN
By Pach Bros., New York

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WILSON'S PHOTOGRAPHIC MAGAZINE.

EDITED BY EDWARD L. WILSON.

VOL. XXXIX. JULY, 1902. No. 547.

OZOTYPE.*

A Review of Past Work and a Report of Further Important Improvements.

BY THOMAS MANLY.

THAT a photographic process giving a large amount of personal control is popular with workers of artistic taste is shown by the number of beautiful examples of Ozotype which have been hung at the leading exhibitions of London, Paris, and New York. Over fifty frames have been exhibited and the work has been produced by various independent artists, all well-known in the pictorial side of photography.

Having had over a year's experience with other workers' productions I am able in a certain degree to point out the cause of some other difficulties. Failures to attain the best results have not been in every case due to inattention to instructions, and I am afraid one of the causes has been due to my own shortcomings. In an entirely new process upon which scarcely any light has been thrown by competent scientists, the progress has been very gradual, and it has been only by constant experiments conducted upon the law of trial and error that an increased knowledge of the subject has been gained.

I will review categorically the principal points in which, in my opinion, the beginner has gone astray, and I trust that my observations may enable him to overcome the few initial difficulties which all new processes possess, and may induce him to go on with one of the most beautiful photographic methods, and I can conscientiously say that now it is one of the easiest.

PAPER.

A perfect paper for photographic processes has yet to be discovered. I find that many workers begin work either upon a rough drawing paper or a piece of common writing paper, and they sensitize a small piece about the size of a whole plate, and sometimes omit the sizing altogether. With regard to this difficulty, I must not lay all the blame upon the workers. I stated in my "Lessons in Ozotype" that cartridge, Whatman, and a few other drawing papers could be used, and so they can if the sizing of the paper is properly attended to and a few other precautions taken which are known to carbon workers when using rough paper. I have seen beautiful Ozotype prints on Whatman, Michallet paper, etc., made by independent workers, and all my prints which were hung at the Paris Exhibition were made upon raw paper before I knew of the virtue of fish-glue sizing. White specks will appear all over the picture if the sizing is not properly attended to. I have introduced a special sizing solution which remains liquid in the bottle and can be poured on to the middle of a sheet of

* This paper, by the inventor of the Ozotype method, will give our readers earliest information concerning the simplifying of this artistic printing process. George Murphy, Inc., New York, is the American agent for the Ozotype supplies.—Editor W. P. M.

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paper and spread with a sponge, cloth, or brush. One or two coats can be given according to the absorbent quality of the paper. It dries very quickly, but the surface should be thoroughly dry before sensitizing. If, in drying, any streaks show they can be removed with a heavy pressure of a dry cloth. This solution is very convenient as it can be kept on the shelf ready for use at any time. No fish glue is required in the sensitizing solution when this sizing is used, but for very rough drawing papers an addition of fish glue or gum to the sensitizing solution would be beneficial. Under this heading, I must caution beginners not to try to run before they can walk. Do not use rough papers at first, but begin on the specially sized papers which are now supplied by the Ozotype Company.

SENSITIZING THE PAPER.

The operation of coating the paper with the special sizing solution seems to have been an easy matter with the great majority of workers, and I have not had a single specimen brought to me that was not very fairly coated when the proper brush was used. I am afraid that the bare idea of what they call an extra "fag" has deterred would-be workers from attempting the process. If they only knew how easy it is and the immense advantages and conveniences attached to this quite imaginary "fag" they would start tomorrow.

For those photographers whose time is limited and who do not care to undertake the operation of coating the paper, a ready sensitized paper in two grades, smooth and fine, for small work, and a rougher paper, similar to the best cartridge drawing paper, for whole plate size and upward will be put upon the market as soon as the special machinery laid down for the purpose is in thorough working order.

PRINTING.

Many workers overprint. It is very fascinating to watch an image developing into a rich color as we open the printing frame and examine the print; but the most beautiful looking initial print is not always the best one for subsequent treatment. And in many cases when the photographer has got his beautiful initial print, he often leaves the plaster in the acetic bath too long, probably with the idea that having got a good thing he will not run the risk of spoiling it by relaxing the subsequent operations. It is astonishing what a small amount of acetic acid and hydroquinone is required. If the printing is carried to an excessive depth too much chromium is formed, and when this is supplemented by a strong acetic bath (or, what is the same thing, too long an immersion), there is an attempt at reversal, and instead of the gelatine picture being strong in proportion, it is weakened disastrously. In Gum Ozotype perfect reversals are easy to get by over-printing followed by a strong acetic solution. I have never managed to get perfect reversals in gelatine Ozotype, but there is little doubt there is a tendency that way.

WASHING.

An idea seems to prevail that the Ozotype image is soluble in water. This is true up to a certain point. Soaking in water for six to twelve hours would have a disastrous effect upon the image and would reduce the chromates to an inactive oxide of chromium. The washing must be vigorous and fairly rapid. Ten minutes to a quarter of an hour in running water would be quite sufficient to remove all the soluble salts from a freshly sensitized paper or one that is a week or ten days old, but for papers that are suspected to be stale give twenty minutes at least in running water. Even in the vigorous method of washing, it is advisable to entirely change the water after five minutes' immersion. If running water is not handy the water should be changed three or four times during twenty minutes.

THE ACETIC BATH.

The majority of those workers who have sought my advice have not given the formula of the acetic bath they have used, so that it is difficult to judge if their failures could be attributed to the composition of the solution. In using the new sensitizing solution, no salts of copper or iron are necessary in the acetic bath, which consists of only two chemicals, namely, acetic acid

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and hydroquinone, and these two substances are used in smaller quantities than in the old bath. Moreover it will be seen that a new departure has been made in the manipulation. The plaster and print are now soaked in cold water for thirty seconds and the plaster immediately transferred to the acetic bath and the wet print applied at the last moment. The reason will be explained in the article on "New Ozotype" following this review.

SQUEEGEEING.

In nearly all cases this has been done too vigorously. In many instances the backing of the plaster has been rubbed up into little pellets by the action of the squeegee. In the carbon process a heavy pressure is necessary, as two insoluble surfaces have to be dealt with. In Ozotype, however, one surface at least is soluble, and the operation of bringing them into contact is much more easily effected. Just two or three light strokes each way are quite sufficient, the subsequent action of placing the squeegeed print between blotting paper and pressing it with the hand being far more effective in bringing the surfaces together than any amount of pressure with the squeegee. It seems that the sudden withdrawal of water from the outer surfaces brings the inner surfaces into closer contact. Pressure does not help matters in the case of smooth, well-sized papers, but when very rough paper is being worked a few minutes' squeeze in a copying press is advisable.

TIME TO ELAPSE BEFORE DEVELOPMENT.

The insolubilizing action probably takes place in half an hour, but it is advisable for the plastered print to remain some time longer, as the gelatine must lose a certain quantity of water before it is in a fit state to develop. After the expiration of three-quarters of an hour it would be safe to start development if soft gum-like pictures are required, but for good detail and sharpness two hours or more are necessary. No drying is absolutely necessary in any of the operations; but when leaving your work for any length of time always allow the paper to dry—never keep it wet between blotting paper or under pressure, or the paper itself will suffer. Even if the squeegeed print is damp it requires some soaking in cold water previous to development. The squeegeed print can, of course, be left two or three days before development, the only difference being that it will require longer soaking in cold water, say three-quarters of an hour in summer—longer in winter.

THE DEVELOPMENT OF THE PICTURE.

One of the greatest difficulties experienced by beginners seems to have been an inability to remove the plaster backing in the hot water bath. To a very large extent this is due to two attributes of human nature peculiar to beginners, namely, overdoing a thing through anxiety to do it well and an inexcusable impatience to see the result of what they have attempted. It is not my intention to lecture my pupils upon this point. We are all human, and I myself am rather weak in this respect.

The difficulty to remove the plaster backing is due to three causes: 1. Overprinting. 2. Too long immersion in the acetic bath. 3. Insufficient washing of the initial print.

The first two cases can be dealt with by leaving the plastered print in the cold water for a sufficiently long time, say one hour in summer or one and one-half to two hours in winter. The third case is hopeless. The temperature of the developing water should be 115° F. for the removal of the backing. Precisely as in carbon printing, if the backing of the plaster comes off too easily, cooler water will be required for development, and vice versa. As soon as the plaster backing has been removed place the print upon blotting paper—do not commence development at once, let the gelatine chill. Where there are several prints to develop this is a great convenience.

ALUM BATH.

Do not place your print in the alum bath until the last moment; you might want to alter some light in the picture by re-development.

THE NEW OZOTYPE.

There was one difficulty that has been experienced by several workers which I re-

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gret was not entirely due to disregard of instructions. Among the many enthusiastic photographers who found in Ozotype a means of artistic expression which no other photographic process rendered so truly and fully there were some who found the process uncertain. Their results were not uniform, and, although at one time they might get a picture which gratified their highest aspirations, the next one would be disappointing. This was an imperfection which I felt required my most serious attention. I thoroughly studied the whole question, and found at last that it was an exceedingly small point and like the proverbial needle in the bundle of hay, because it was so minute it took an enormous amount of finding. The imperfection was in the sensitizing solution, which has now been so improved that it not only gives clean and uniform pictures, but the acetic solution requires no addition of copper or iron. Acetic acid and hydroquinone alone are now used, and the quantities have been reduced. Now that the metallic salts are omitted the solution will keep good for a month or more, which I think is a great step in advance, and the proportion of hydroquinone being reduced it is cheaper to make up.

Taking 40 ounces of water as the standard quality:

Glacial Acetic Acid . . .	40 minims
Hydroquinone	15 grains

is a good solution for a print from a fairly plucky negative, one that will give a good platinotype print.

Glacial Acetic Acid . . .	70 minims
Hydroquinone	15 grains

is a good solution for a print from a weak negative such as a good P. O. P. printer.

Glacial Acetic Acid . . .	30 minims
Hydroquinone	20 grains

is a good solution for a print from a negative with strong contrasts.

To produce plucky prints from very weak negatives metol may be used in place of hydroquinone:

Glacial Acetic Acid . . .	50 minims
Metol	15 grains

will give a splendid plucky print from a weak negative.

In fact metol has a stronger action than hydroquinone, and may be substituted for it in many instances.

It will be noticed from the above formulæ that an increase of acetic acid deepens the shadows, or, in other words, raises the relief, and is effective in the case of prints from negatives with weak gradations, and, vice versa, a decrease of acetic lowers the relief and is beneficial for prints from negatives possessing strong contrasts. Now that we have only two ingredients to consider, the modification of the acetic solution is a simple matter.

The next most important improvement is the method of controlling the amount of acetic solution which the plaster absorbs, accompanied with the great advantage of bringing the two surfaces into the best condition for squeegeeing, and thus reducing the risk of air-bells to a minimum. In the ordinary carbon process the tissue and the transfer paper are placed in cold water. The tissue is allowed to absorb a certain quantity of water, and no more. Now let us seek the reason of this very ingenious method of procedure, which was invented by Mr. S. B. Johnson and which gave an immense impetus to carbon printing in its early stage. When gelatine has absorbed less water than will saturate it, it is very eager for more, and if its unslaked thirst is partly satisfied it will drink the remainder of the water very rapidly. In the carbon process, when the tissue is ready for squeegeeing it is very eager for more water and sucks up a part of the water from the surface of the transfer paper, producing a partial vacuum, and the surplus water is expelled by the squeegee. In Ozotype, however, the surface of the plaster is soft and soluble and adheres more readily to the print, and therefore requires less pressure in squeegeeing. It is the insolubility of the surface of the tissue in carbon printing that causes blisters when air happens to get between it and the transfer paper. In Ozotype an imprisoned air-bell produces a white spot only. Now if we allow the pigment plaster to imbibe a certain quantity of water, less than saturation, and transfer it at once to the acetic bath, it will only take about half the time to absorb the same quantity of solution as if it were immersed in a dry condition. The advantages of this method are considerable. Air-bells can be removed while the plaster and print

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are in the cold water. We can, when required, give a very short immersion, whereas in the former method it took some time for the solution to break the crust, as it were, of the gelatine, and if the print is placed in cold water at the same time as the plaster the two pieces are soft and pliable and in the proper condition to squeegee. Please bear in mind that although it is recommended to immerse the print in cold water at the same time as the plaster it should not be put into the acetic bath till the last moment.

Although these few points may seem trivial to the casual reader, they are of immense importance when we come to deal with a photographic surface which so many influences are ready to disturb at the least provocation and where the greatest care must be taken that light alone should effect the desired change in its composition.

It will perhaps be an assistance to the student if I were to summarize the principal features in the new departure and describe the new materials which are being prepared for the Ozotype worker.

1. The sensitizing solution is made from a new formula, and is greatly improved.

2. The acetic bath does not require the addition of either cupric or ferrous salts.

3. The acetic bath need not be heated when smooth or well-sized papers are used, as only rough papers require heat.

4. Drying is not necessary in any of the operations. The prints may be taken out of the washing water and pigmented at once, and it is not absolutely necessary that the plastered-print should be dry before development if the requisite time has elapsed for the acetic solution to act. It is, however, advisable that the gelatine should lose a certain quantity of water before developing. So that, if it is desired to develop in the shortest time after pigmenting, the plastered-print should be hung up on a line and exposed to a current of dry air to assist evaporation.

5. Both the plaster and print are placed in cold water for thirty seconds, the plaster is then transferred to the acetic bath and allowed to soak for twenty to thirty seconds according to the extent of printing. The print is removed from the cold water at the same time as the plaster, and held in the hand while the plaster is in the acetic bath. The moment the necessary time (from twenty to thirty seconds as mentioned above) has elapsed, it should be brought into contact with the plaster under the surface of the acetic solution.

THE NEW MATERIALS AVAILABLE FOR THE OZOTYPE WORKER.

1. A new sensitizing solution.

2. A special sizing solution which will keep indefinitely and is liquid at ordinary temperatures. It is applied to the paper by means of a sponge, flannel or brush, and dries rapidly. Should any streaks appear while drying, they may be rubbed off by a heavy pressure of a dry cloth, but unless they are very pronounced they will not show on rough paper when dry. One or two coats may be given according to the absorbent quality of the paper. For a sheet 25 x 20 inches, or 30 x 15 inches (which is the size of the paper supplied by the Ozotype Company's agent), pour a pool about the size of half-a-dollar on the middle of the paper and spread with a flannel, sponge, or hog-hair brush.

Quite a number of sheets of paper can be sized in an hour, and as they will keep indefinitely, an hour's work one evening will provide material for a long time to come.

Fish glue may be mixed as usual with the sensitizing solution for soft effects, and as many workers have been very successful with it, Lepage's best photo-engraving glue, diluted ready for use, is included in the new price list.

3. The paper for coating which is now sent out by the Ozotype Company is specially sized by machinery, and does not require the addition of fish glue or other sizing material to the sensitizing solution.

4. The new pigment plasters have been greatly improved and give great richness of color.

5. A ready sensitized paper will be put upon the market at the earliest possible date. It will keep with ordinary care for at least a month, but there is no occasion to store it for more than a few days or a week, as, thanks to the liberty that can be taken with Ozotype in the direction of leaving off work and starting afresh at a

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more convenient time, the sensitized paper can be printed and washed and the remainder of the operation deferred to suit the convenience of the worker. 6. A new book of instructions, entitled "Instruction in Ozotype," is in press.

PHOTOGRAPHY AT THE ST. LOUIS WORLD'S FAIR.

[WE are glad to publish in these pages the letter from Colonel J. A. Ockerson, which follows. It informs our readers of the spirit in which the authorities of the St. Louis Exposition regard Photography, and tells what they propose to do for its representation at the Fair. The work done by Mr. Strauss and his associates has borne good fruit, and the concession gained is an important one.

It now remains for photographers everywhere to rally to the support of the Exposition authorities. If we can make known the necessity for a more definite arrangement regarding the admission of pictures by photography to the Fine Art Department there can be little doubt but that the assurance desired can be gained. Doubtless, the strain upon the available space in the Art Building will be great. But the uncertainty as to even worthy pictures finding a place therein should be removed. We invite expressions of opinion from all of our readers.—ED. W. P. M.]

Editor: WILSON'S PHOTOGRAPHIC MAGAZINE, New York City.

DEAR SIR: In your April issue you gave considerable space to the subject of photography at the St. Louis World's Fair, which I was glad to see.

As my position in regard to recognition of artistic photography has been misunderstood, kindly permit me to make a brief explanation.

The classification was adopted by the Louisiana Purchase Exposition Company, and approved by the National Commission before I became connected with the Department of Liberal Arts. Under these conditions my efforts were directed toward providing an acceptable place for the work of the photographer in the Liberal Arts Palace. My own high estimate of artistic photography naturally led me to feel much gratified that this attractive work had been assigned to my department, and I was glad of an opportunity to offer a specially prepared space in one of the most attractive palaces of the Exposition for the display of this class of work.

After a great deal of careful consideration on the part of Professor Halsey C. Ives, Chief of the Department of Art, and myself, an agreement was reached whereby artistic photography of special merit may be hung in the Palace of Art as far as space will permit.

The manner of selection, etc., is set forth in detail in my Circular No. 5, inclosed herewith, which I hope may find space in your columns.

My earnest endeavor will always be to give all of the exhibitors of my department every possible facility for a satisfactory display of their exhibits, and in return I trust they will accord to me their cordial support.

Personally, I feel confident that the erection of a special "Art Building" for Photography would be a grave mistake and a disappointment to its advocates. It would be dwarfed by the gigantic palaces which surround it, and, while it might attract photographers, the great mass of people, whom I assume should also be reached, would see little or nothing of it.

Aside from this, I beg to say, in conclusion, the Chiefs of the Department of Liberal Arts and the Department of Art have, from the beginning, been favorable to a proper recognition of artistic photography, the question of space available in the Art Palace being the chief element of doubt as to the placing of such exhibits.

Trusting that our Exposition may be favored with the hearty support of your valuable MAGAZINE, as well as the photographic fraternity generally, I beg to remain,

Yours very truly,

J. A. OCKERSON,
Chief Department of Liberal Arts.

UNIVERSAL EXPOSITION, ST. LOUIS, U.S.A.
DEPARTMENT OF LIBERAL ARTS.

[Circular No. 5.]

The anniversary of that important historic event, the acquisition of the Louisi-

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ana Territory, will be celebrated in St. Louis by a Universal Exposition, embracing exhibits gathered from every field of human endeavor, both at home and abroad, which will illustrate to the fullest practicable extent the developments of a century in art, science, and industries.

The national and international scope and character of the Exposition are fully set forth in the organic act of March 3, 1901, in the following terms:

"*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, that an exhibit of arts, industries, manufactures, and products of the soil, mine, forest, and sea, shall be inaugurated, etc. The President shall be authorized to make proclamation of the same. And he shall, in behalf of the Government and the people, invite foreign nations to take part in the said Exposition and to appoint representatives thereto."

It is also voiced in the proclamation of the President of the United States, issued August 20, 1901, under the above authority of Congress, who, in the name of the Government and the people of the United States, invited all of the nations of the earth to take part, "By appointing such representatives and sending such exhibits to the Exposition as will serve to fitly illustrate their resources, their industries, and their progress in civilization."

The Exposition will occupy a beautiful site, covering about 1000 acres in area in and adjacent to Forest Park in the central-western part of the city.

The opening date has been fixed on May 1, 1904, and the closing date on November 30, following.

At the inception of the work the designing of the buildings and the embellishment of the grounds were assigned to a commission composed of some of the leading architects and landscape engineers in the United States, and the results will undoubtedly be such as to win the enthusiastic admiration of all visitors. By means of colonnades and inner courts they have made special provisions for shade and coolness throughout the exhibit buildings.

The Department of Liberal Arts will occupy an entire building covering an area of about 400,000 square feet, and all exhibits will be on the main floor. It is the most easterly of the main exhibit buildings, and is near the United States Government Building. It will be built of staff at an estimate of $500,000. Although following the prevailing style of architecture of the Exhibition—the Renaissance—it adheres very closely to classic lines.

The building is to be constructed without interior columns, the exhibit space being spanned in one truss. The internal court can, if necessary, be used as an overflow exhibit space. The exhibit space is adapted to any kind of exhibit, and the building will be ventilated and lighted by an abundance of windows, both in the exterior walls and in the clerestory.

Diligent efforts will be made to fill this building with attractive and interesting exhibits of products and processes of the highest types of the various arts and industries of to-day from all parts of the world, and at the same time illustrate their evolution by showing some of the products and processes of the earlier days.

Your earnest co-operation is solicited, and you are cordially invited to submit plans and specifications for exhibit space in this department in one or more of the groups of the following classification:

Group 15. Typography—Various printing processes. Equipment, processes and products.

Group 16. Photography. Equipment, processes and products.

Group 17. Books and Publications—Bookbinding. Equipment and products.

Group 18. Maps and apparatus for geography, cosmography, topography.

Group 19. Instruments of precision, philosophical apparatus, etc.

Group 20. Medicine and surgery.

Group 21. Musical instruments—Materials. Processes and products.

Group 22. Theatrical appliances and equipment.

Group 23. Chemical and pharmaceutical arts. Equipment, processes, and products.

Group 24. Manufacture of paper. Raw materials, equipment, processes, and products.

Group 25. Civil and military engineering.

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Group 26. Models, plans, and designs for public works.

Group 27. Architectural engineering.

Each of the above groups is divided into several classes. Group 16, relating to photography, its processes and products, is further described as follows:

GROUP 16: *Photography, Equipment, Processes and Products.*

Class 54. Materials, instruments, and apparatus of photography, equipment of photographic studios.

Class 55. Negative and positive photography on glass, paper, wood, cloth, films, enamel, etc. Photogravure in intaglio and in relief; photocollography, photolithography, stereoscopic prints. Enlarged and micrographic photographs. Color photography. Direct, indirect, and photocolor printing. Scientific and other applications of photography. Artistic photography as applied to portraiture, landscapes, etc.

This group embraces the equipment, processes, and products of photography in all its branches.

Photography will here find an attractive home, amid congenial surroundings, filled with displays of the graphic arts, music, the drama, civil engineering, architecture, etc.

Special provisions will be made for the display of selected high-grade examples of artistic photography.

Admission to this class will be confined strictly to such art work in photography as may satisfactorily pass the critical inspection of the National Jury of Selection of the Department of Art.

The pictures from United States exhibitors which are thus admitted shall be hung in the United States section of the Art Building to such extent as the room available will permit.

The pictures from foreign exhibitors will be admitted under similar rules, but must also, in all cases, conform to the rules of the respective foreign sections to which they belong, as to whether they can be hung in the foreign sections of art or not.

A suitable, attractive space will be specially prepared in the Liberal Arts Palace, where pictures selected in accordance with the above rules may be properly displayed, in case they do not find suitable space in the Art Building.

Under this system there should be gathered such a fine array of artistic photographs as will merit the admiration of art connoisseurs and win the plaudits of artists of the older schools of the brush and pencil.

The very large number of professional and amateur photographers in all parts of the world who are daily producing pictures of a high order will doubtless gladly lend their aid in gathering a most interesting and valuable display of their work.

The latest developments in color photography in all its phases should be freely treated, as also the scientific applications of photography to astronomy, surveying, etc.

The photo-processes also afford a fine field from which to gather attractive exhibits.

All classes of cameras and their appurtenances will find a suitable place in this group.

It would also be very gratifying to have examples of the work done and the cameras used by Wedgewood and Davy, Niepce and Daguerre, and others of the earlier workers, to show the progressive steps of this wonderfully fascinating art.

The specific mention of certain features of the several classes are simply suggestions which can readily be amplified by similar treatment of every item in the classification.

The Rules and Regulations of the Exposition accompanying each application blank should be carefully considered before filling out requests for allotments of space. These must, in all cases, conform strictly to said rules and regulations.

In the preparation of exhibits, it should be borne in mind that the best interests of the exhibitor, the visitor, and the Exposition require that no effort should be spared to make the exhibit attractive in its arrangement and in its movement, and special processes should be shown whenever it is practicable.

While as liberal allowances of space will be made as are found to be practicable, exhibitors should restrict themselves to as few well-selected examples of their products as permissible, with due regard to the

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creditable display of the best features of their work, rather than attempt to make an exhibit attractive through its magnitude.

There will be no charge for space occupied by exhibits, and a liberal amount of power for the operation of mechanical devices to illustrate processes of special interest will be furnished to exhibitors gratuitously.

Any further information desired will be promptly furnished on application.

An early response to this circular will be appreciated.

J. A. OCKERSON,
Chief Department of Liberal Arts.

EXPOSURE OUT-OF-DOORS.

BY A PRESS PHOTOGRAPHER.

I HAVE known photographers perfect in the art of negative-making under the skylight who are hopelessly at sea when asked to undertake some out-door commission. Then the variation in light—often with an added intensity—the wide range of subjects, the different lens used, and the question of the right stop, all combine to perplex and confuse. The utter inconsistency of almost every factor connected with negative-making is responsible for nine-tenths of all the spoilt or defective negatives. Some of these factors we can learn to understand with a certain mathematical precision. The stops of the lens can be measured, and their absolute and relative speed values known, the speed of the plate can also be very closely ascertained, either by experiment or by reference to the comparative tables which have been published in this and other magazines. In spite of what some would have us believe, the speed values of plates are sufficiently constant for any practical work. When we get to the factors of light and the relative value of subjects, or of distances from the lens, we reach ground where a little experience is necessary. I know a successful worker, a good studio operator and an intelligent man, who for months came to grief over out-door work—mostly shipping. He had an expensive lens, and he attributed all his ill-luck to it. When he found the real cause he wanted to kick himself. He was working his lens wide open and was over-exposing his plates much beyond their latitude. It is a little incomprehensible how a man could possibly miss finding what was the matter when he got his plates flooded with developer, but this man continued in his error until he called in a friend to discuss it.

Over-exposure is like fire—it is a good servant, but must be kept in place. In theory, all plates should be correctly exposed; to practice this is impossible. Under-exposure is fatal to a perfect negative; at the best it can but result in clear glass shadows. Under-exposure is the bane of the amateur of small means, because he uses a lens which will not work with an aperture larger than $f/16$, and because he will persist in giving snap exposures in the woods or on the shady side of the street. The professional does not err on this side of correct exposure. His in-door work is portraiture; taking the exposure necessary for out-door portraiture as the unit, the exposures for the subjects will be represented as fractions. Thus a landscape or well-lighted street scene, with no foreground object within twenty yards of the camera, will require barely half the exposure requisite for a portrait under the same light. And one-tenth exposure would be ample for a coast scene, or a picture of snow. Much out-door work is done in bright sunlight. Every photographer knows what it means to have an intense flood of light on his sitter and the need of blinds or screens. But out-doors there are no convenient shades, and the light is not confined to that coming from the north, but comes from every point of the sky; mostly, of course, from overhead. The trouble, therefore, for the man who uses a lens working with a large aperture is over-exposure. It has frequently been suggested that rapid plates are used where slower ones would be preferable. Such advice is all right for a beginner, but cannot be commended to a bread-and-butter photographer. I can imagine the feeling of some photographers at a race late in the after-

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noon when a bank of clouds covers the sun, when he has only slow plates, and an exciting finish dashes past. The press photographer should always be ready for the worst of possibilities as regards light.

I will not recommend or discuss the different brands of plates, because there is one rapid plate on the market which I have no luck with, and I do not care to name goods when judging from the work of others—which is reasonable logic. I am forced to conclude that the fault is in me rather than in the plates. But choose a plate which has all the latitude possible. By this I mean a plate which can receive ten or a dozen times a normal exposure and yet yield a good negative with careful development. In my own work it is an invariable rule to over-expose, if possible. I like to give four or six times what I consider a minimum normal exposure. This latitude has always been considered as a special feature of slow plates; so it doubtless is. But it is erroneous to suppose that rapid plates altogether lack it. With almost any rapid plate on the market I would get a negative in every way perfect for my purpose—which is to produce a crisp, sharp print which will take the eye of an editor—with an exposure eight or ten times longer than the normal. And I will get sufficient density, without fog.

If exposure is the first consideration of good photography, development is certainly a good second, and the development of over-exposed plates is worth special attention in an article solely devoted to it. Next month I hope to treat of this question.

PRACTICAL ADVERTISING.

The Kind That Brings Business.

BY CHARLES P. MARSHALL.

ABOUT BOOKLETS.

SOME booklets are good, some good for nothing. But there is no necessity for abusing the booklet idea because one is bored with a lavish inpouring of badly-printed booklets, whose particular sins are poor paper, freakish type, crowded matter, miserable display, and "bound" to beat the best set of nerves that ever essayed to open them. For uncut pages, smudgy cuts, and pages stuck together one-quarter their depth are trifles which wellnigh unhorse the best disposition.

That there is a growing need for booklets in every business is undisputed, especially a business dealing in luxuries such as photographs. Public opinion needs stimulating constantly if we aim to provoke a steady demand for portraits.

Mr. Paul Clare, in the May number of this MAGAZINE, sounds the keynote of success in making booklets when he mentions the "Don'ts." Grown-ups, you know, are very much like children, in that they resent the everlasting "Don't do this and don't do that!"

Haven't you in mind that class of preachers who dangle the Decalogue before the eyes of their congregation, pounding the pulpit and prodding them with the old pointer, "You'll be damned if you do, and be damned if you don't do so and so."

Then they wonder why they fail to win souls!

Perhaps the twentieth century sinner is smarter or more slippery than his ilk of fifty years past, and the old bait doesn't disguise the hook, and fails to lure the lost one.

Now, mark you another of the cloth. "The tactful teacher who steers clear of the Decalogue shoal and pilots you along the beautiful stream of the beatitudes, gently proclaiming, 'Ye shall be *blessed* if ye do so and so.'"

When the round-up is made at the end of the pastoral year he of the beatitudes has a better showing of sheep than the preacher of the Decalogue. The church grows, and the business of spreading the gospel in that field has prospered.

If Mr. Clare carries out his creed, as I believe he does, his business is flourishing and his friends are not a few.

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Now, as to the kinds of booklets that are suitable for the photograph business.

If you have just opened a studio, issue a booklet well illustrated with choice specimens of portraiture and several scenes about the studio, giving a general description of the rooms, the equipment, the styles, and prices.

Once a year such a booklet should be issued by every studio, whether in village, town, or city.

Take Mr. Clare's advice to leave out all the "don'ts." Remember the day of "directions" for "what to wear and how to appear" is ancient history. People who can afford high-priced portraits are generally well dressed, and their costumes can be made to appear to advantage by skilful lighting, if you know how.

Again, to the class who can only afford ordinary grades of portraits, such directions are generally superfluous, because their limited means allow them only a small variety in dress.

But the following clause will offend neither high nor low, and covers the ground, viz.: "Please bring plenty of gowns, that you may have a good selection in your proofs."

How easy it is to ask a woman to bring several dresses. She considers it a compliment, and nearly always complies, accepting it as an honor to have "so much pains taken with her."

Then, when she arrives with her gowns, you can freely discuss tints and styles without giving the slightest offence. It at once proclaims you a past master in portraiture, that you know something about costumes as well as cameras.

From all parts of the country I receive scores of letters of inquiry—"How to do this?" "How to do that?" "How would you improve my pictures?" "What must I do to better my business?" "I understand photography perfectly, but wish to make better pictures, that my trade may grow by reaching a more appreciative class, what shall I do?" "Please tell me how to get up a really nice booklet?" etc.

I wish I could personally visit a great many studios, staying a few days in each, answering questions about advertising, and showing how to put pictorial effects into their photographs—how to compose a picture. There are hundreds of little points about picture-making and business methods that could be answered so quickly if face to face with the inquirer. Right here I may state that I have had in mind for some time a tour through the East, West, and South, reaching certain studios at close range. This I will discuss at another date, space permitting.

The effective booklet must be worded very carefully—a little "froth" dashed off at random, or a little chit-chat, will not do. It must be written by some one in intimate sympathy with the portrait business.

The writer of booklets on clothes-wringers, horseshoes, insurance, and "everything" can present only *general* arguments. But to have the booklet read right from the customer's stand-point requires a sympathetic pen wedded to the business.

Next, the illustrations. If you cannot afford good half-tones, *well-printed*, use no illustrations at all. Because a poor or even *half*-good illustration is a *positive* danger. The cheap appearance at once proclaims yours a *cheap* studio. (People of sense reason that if you put out such a botch of a booklet, your portraits will have the same character.)

One or two really good illustrations outweigh a volume of common cuts; and all the rhetoric at your command will not rescue the poor impression given by the poorer cuts.

The printing, too, demands the most exacting attention. There are plenty of places where artistic printing can be had that costs no more than an inartistic job.

The country newspaper and job office combined is no place to have a fine booklet printed. Place your order with a first-class concern offering a fine variety of type, border, rule, etc., and who make a specialty of half-tone printing. Bear in mind, please, that the best half-tone block made can be so poorly printed as to defeat all the good press-work in the solid or descriptive matter.

I have seen attractive-looking booklets (from the outside) which, upon opening, disclose the most beautiful typography fairly groaning with despair because the adjoining illustrations were flat impressions, smudgy, and disappointing, on ex-

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pensive paper, too, which all the more emphasized the *caricature*. It is like wrapping a raw potato in a silk scarf or mounting a miserable print on immaculate vellum.

Attractive booklets can be arranged without illustrations, but the booklet that has "nice pictures" in it will do ten times as much good. Have no fear, the extra outlay will pay good dividends.

What is your opinion of the booklets that come to your desk? Do you not, by preference, read the ones that have good pictures?

Whatever your specialty, you should have special booklets upon the same ready for immediate use.

If babies' and children's portraits are a feature, you should have on hand a supply of pretty illustrated booklets all about babies, which you should mail to every mother in your field. Watch the birth-list in the newspaper, and when baby is old enough—three or four weeks—mail a booklet to the mother with a nicely worded letter.

If brides' portraits are your hobby, send a booklet well illustrated with brides' pictures, and a carefully considered letter to every lady in the land who has just taken to herself a husband. Consult the marriage list in all the newspapers in your field for data.

Again, should copying and enlarging be your specialty, watch the death list in the newspapers, and after a reasonable time—say three or four weeks—mail an illustrated booklet on enlarging and copying to the family, with the right sort of a letter, and so on with all branches of the business.

If the people thus addressed do not respond within a reasonable time send another copy of the booklet with a different letter. Do it the third time, if necessary; and if the business can be brought your way at all the third letter will generally bring it.

These letters, however, must be written in just such a way to do the work. If you haven't the skill to build such an epistle secure the services of someone who knows how to arrange "follow-up" letters.

This brings us face to face with the old argument, the sound argument, upon which all advertising is based, viz.: *persistency*. Keep at it everlastingly until the people believe in you and your work.

A word about mailing your booklets: Always send in a neat envelope, sealed, and with a two-cent stamp. This will ensure its being opened and read by the person addressed, otherwise it will go to swell the waste basket.

Have *no* printing at all on outside of envelope; it then appeals to the recipients privately, and will command more attention.

Use good stock for your envelopes. No thin, manila bound, but an envelope of good weight, substantial, and of light tint, preferably white.

Beside the regular annual distribution of booklets, you will have occasion to use them very often to attract visitors. Keep your eye upon the society columns. Every visitor announced should immediately receive your best booklet. Keep your eye upon the community as well as your camera—a little long focusing outside the ground glass will develop many a dollar.

There are a great many points about booklets which space forbids. *But if any photographer is personally interested and wishes to ask me questions, he or she may feel at liberty to do so.*

Summed up, a modest ad. in your newspaper, together with good booklets, issued at proper time, are strong levers to lift trade—IF the "goods" (your pictures) are all right.

This is the all-important question, right straight to you. Are your goods all right? If not, all the booklets ever printed cannot help you.

At a not distant date I shall have something to say about Pictorial Portraiture—that is, portraiture which embraces more than a mere likeness. Remember, your work is your *best* advertisement.

It stands for or against you. See to it that your work is in your favor. Study picture-*making*—COMPOSITION, I mean. You'll certainly need it in the near future. There is a class of customers in every village, town, and city that will pay well for a picture, as well as a likeness of themselves. I am speaking from experience, having developed a high-priced trade upon "*pictorial*" qualities in my portraits—qualities that command $10 to $45 for twelve choice prints, without an argument.

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I receive hundreds of specimens of portraiture from all parts of the United States, with inquiries relative to booklets and other mediums of advertising. But, alas! a large number of them lack the pictorial element that would place them high on the plane of picture-making. The chemical work is faultless, but the pictures lack the assistance of good composition to command high prices and a reputation for you as an *artist* as well as a photographer!

Do you aspire to reach the top round of the ladder of photographic success? Then arm yourself immediately with a thorough knowledge of composition and pictorial qualities. Not only know about them, but know how to do it yourself!

This is an age of action, and those who dilly-dally along the wayside putting off their *composition study* will silently drift into the rear ranks.

Sound the alarm! Don't be satisfied to rest on your oars! "To rest is to rust!"

Many a professional photographer has quietly prepared himself along the art line, and has built for himself a prominent name and envious business! Many an amateur, too, whose average knowledge of chemicals and camera is way below yours, is making portraits, good ones, too, full of art feeling as well as likeness. Silently they are usurping your field. Will you stand idly allowing them to outclass you? Will you let their knowledge of composition walk away with your heritage?

Printer's ink will do much if backed up with good work. But have a care. There are changes going on; rapid changes. Look to your laurels. Study composition and pictorial photography; put it in practice. Then your booklets and other ads. will win you a substantial patronage and an honorable place in the profession.

FOR THE HOLIDAYS.

ALTHOUGH convention times are here, and photographers are, or should be, combining a good time with business advancement, it is not of these holidays which I would speak; but rather of the times when the world outside the studio makes holiday and the photographer is reaping the dollars. Holiday time with the public should spell busy time with the photographer, a time for making money. A holiday trade, properly looked after has practically no possibilities of loss. It is more a question whether the prize will be a small or a big one. Whatever may be the case of photography at other seasons of the year, at holiday times it comes fairly under the head of *luxuries*. The man who pushes his business then is not even competing with his fellow photographer; he is bringing money into the fraternity which otherwise would have gone elsewhere. If a person can be persuaded to give a beautiful carbon portrait of herself as a Christmas gift she is merely spending on photography what would otherwise have gone elsewhere. If the summer visitor at the seaside takes a dozen portraits home with him—well he had so much money to spend, and if it had not gone one way it would have gone another. The period of the year which can be termed "holiday" varies in different places. Christmas is an almost universal holiday, one which should be prepared for beforehand; the Fourth of July may be looked on as a holiday trade possibility in some small country cities, a day of rush, on which to make as many exposures as possible. There are the local dates of schools and colleges, which are so obviously important that they are seldom overlooked. There are local festival days or weeks in many States; there are holiday resorts in the mountains or on the lakes. The photographers in spots which are inhabited by crowds of holiday makers for a few months only in each year seldom need reminding of the importance of business. Usually they open studios in such places for the holiday season only, and for the time being that trade is the beginning and end of their existence. They are there for the purpose, and look on the visitors as their lawful game. The man who is apt to miss a holiday possibility is the man who swings his shingle from the one door all the year round. With him there is the possibility of thinking the game not worth

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candle, for there are still a number of photographers with a touch of pessimism in their nature. Or he may let the opportunity pass through sheer not getting down to take advantage of it.

Why not approach the holiday season with an outbreak of enterprise? Instead of waiting for the trade to come along, go after it, and make it come. The only trouble about waiting for it is that very often it passes the door altogether. Have something new, and something *good* if possible. The "self-made man" who has been writing a series of letters in the *Saturday Evening Post* fairly hits the weak point of old methods: "I don't care how good old methods are, new ones are better, even if they are only just as good. That's not so Irish as it sounds. Doing the same thing in the same way year after year is like eating a quail a day for thirty days. Along toward the middle of the month a fellow begins to long for a broiled crow or a slice of cold dog." This about hits the monotony of non-progressive methods. There is nothing worse than wheeling for a long day along a straight, level road, through a dull country. The wheelman begins to think that a vicious dog, or a burst tire would be a pleasant excitement.

In trying to draw attention to a studio's possibilities a number of writers—and a number of successful photographers who have tried it—advocate newspaper advertising. It may be good, but the man who tackles it should understand something about it; or, at the very least, he should carefully sit down and first count the cost. But however it is done, whether by advertisement, or circular, or personal call, it should be done with as much *style* as possible, and carry some offer or suggestion likely at least to attract favorable attention. It would seem to be a common mistake to offer some special cash terms, to tempt people by the low price. Better to tempt by exceptional value in quality than in price. One of the most successful revivals at present is one in London, where a very high-priced—as photographs are priced—pastel is being offered. In this the head is delicately colored, with all the detail of blue or brown eyes; the mass of carefully finished rich hair; the suggestion of jewels at the throat or in the hair. The dress is more in the nature of a faint sketch—a good instance of subordination of detail.

The whole interest centres in the face, or face and hands, and in the position which they occupy on the area of paper. The pastel is quite possible as a high-class novelty in the right hands. A good enlargement is a very acceptable present, but its limitations prevent its being an ideal leading line. There are novelties innumerable for a medium grade of trade, but in a holiday effort the attempt should be, where possible, toward the best. Too little seems to be done in the way of varieties. Of course there is always a risk, as in the case of the man who did a number of platinotypes at a time when "flesh tints" were being obtained by local toning. He spent much time in making a number of these beautiful tinted pictures, and his customer simply "didn't like them." But the essence of using a novelty on an advertising basis is to attract to the studio, not to spring upon a customer after she is obtained. There are many colors possible in carbon; even the man who buys his tissue ready sensitized has choice, and he can buy in small quantities; an offer of half a dozen carbons in six different, "delicate, beautiful, and undoubtedly permanent" colors, should prove a good line. Variety is one of the surest drawing cards in photography. Give the prospective customer an idea of something special and above the ordinary to meet the special occasion. There are such things as sepia platinums, and with a little care and thought a sufficient change can be rung—in more ways than one—to give an appearance of distinctiveness to each one of a dozen prints.

There is no longer any excuse for old-time methods. Whether modern work is better than old or not, the method of presenting it to the customer should advance with the times. There is much good in the old, but if revolution is bad, at least evolution is necessary and vital to healthy progress. The photographer's trouble too often has been that his holidays have come too frequently and unasked. Some unfortunates gaze from their doors and ruefully think that they have been cursed with

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perennial leisure. A hunting after business in the holiday times of other people (and also in all quiet times) is one way toward ensuring to the photographer the ability to take a legitimate holiday and to look forward to it with pleasure.

LARGE PORTRAITS.

BY E. J. DURFEE.

THERE is, and doubtless always will be, a steady and a profitable demand for life-size portraiture. It is a rather suggestive fact that such work is more often spoken of as *enlargement* than as portraiture. It suggests unmistakably that a majority of these creations are enlargements from small negatives. There is, undoubtedly a large trade done in enlargements from small negatives or small photographs—a trade which is inevitable, and which should be cultivated and encouraged as much as possible. But such enlargements are largely the outcome of necessity, and are acceptable on this score rather than as a good thing in themselves.

The suggestion made, of direct portraiture in large sizes, does not seem an unreasonable one. Such a branch of work could not well be made a novelty or a leading line, for it would want, if not appreciation, at least a long purse on the side of its patrons. But it has its place in some businesses, and should not be neglected. Most particularly, perhaps, it should be adopted as an article of gospel by those fortunate photographers who photograph famous men and women. There seems something radically wrong when we see a portrait of, say, our late President, which has obviously been enlarged from a cabinet negative. It is no matter of sentiment which prompts this, but a mere matter of "quality." A lens always exaggerates more or less; and this exaggeration is greater in an enlargement than in a direct photograph—if the latter is taken with proper understanding. Then, too, there is no absolute need for that horrible enlargement of grain which we find in connection with so much large-size work. It is true that by stepping across a room, or by finding the "correct view-point" we may eliminate this grain and enjoy the picture; but it is equally true that the grain is not necessary to pictorial effect.* Large size work seems to have its fascination for some workers; but the work usually takes the direction of figure work —most often full length. There is some very beautiful work done in this; but it is probably true that nineteen out of every twenty large pictures have no merit to recommend them. There seems to be a widespread idea that art is on the side of the largest area. It is a great mistake. A picture, so far as arrangement, pose, etc., is concerned, can be just as well produced in miniature as in large size, and without that impression of waste of material and energy in case of failure.

Could not a proportion of this fondness for large work be turned toward large heads? Photography is no longer limited to $5 a dozen, and as small work has taken the place of hand-sketched miniatures, so might large work at a fair price prove more acceptable—if produced by a really competent and trained man—than second-rate painted portraiture. Next to the all-important personality of the photographer, comes perhaps the lens as a necessary factor toward success. This need not be an expensive lens—it need not even be a modern one. Indeed, it is quite possible that a good old "back number," such as may be selected from a catalogue for a trifle will do the work perfectly. Its chief qualification is that it must be fairly long focus; for the rest it is a matter of practical trial and selecting the lens that does the work the best. The length of the studio may decide the focus length of the lens, but long focus if possible. Given a long focus lens, we not only get a better perspective, but get also a better equality of definition—there need be no

* The grain would not appear, however, if the enlarged negative were made from a transparency done from the original negative, and not from a print.

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ears out of focus when the eyes are sharp. One of the advantages of large work is that more natural effects may be obtained —at least I think I get better lighting and modelling in my large heads than in enlargements. I have never attempted anything except soft gradation; full exposure with all the modelling possible. In cabinet work I do much concentrated lighting against dark backgrounds and Rembrandt work, but I never attempt these effects in large size. Hard negatives should be avoided. Heavy, coarse-featured people are better in small sizes; they can then be retouched and slicked-up, and enlargements made if necessary.

The sale of a good frame should be a part of every large portrait transaction.

NEWS AND NOTES.

In an English contemporary is an advertisement of a business for sale. "Photo and bird-stuffing business for disposal; good thing for beginner" reads the ad., and the price of the "good thing" is $400. An occasional glance through the "prepaid" colums of an English paper is interesting—though not always very cheerful. On the all-important matter of wages, employers are almost unanimously silent—possibly because one or two starvation offers have led to the publicity of letters to the editor. Employees are not quite as reticent. A "lady receptionist and retoucher," age twenty-five, offers her services for a weekly $3.50; and an "artistic retoucher who is also a good miniature painter" asks $10. A respectable young man and a young gentleman figure among the applicants. An eloquent protest against what is an unfortunate phase of the assistant question on both sides of the Atlantic is found in the frequency with which the word "permanency" appears among the "situations wanted."

Stereoscopic postal cards have appeared in Paris; twenty-four of them together with a folding stereoscope of the old box form may be purchased for 60 cents.

European photographers are happier in their copyright laws than are the American. The fraternity in England has a strong and effective copyright league, which has put the fear of law into the hearts of illustrated papers, and now the Germans follow suit in good style. A correspondent gives particulars in the London *Daily News*. It seems that during the last ten years the production of "very fine" painted porcelain has been steadily increasing in Vienna, and thousands of men and women now live by this branch of art industry. But a danger has arisen which threatens to ruin it altogether. When first the art of painting what is called "Old Vienna porcelain" was revived the classic subjects which the old porcelain manufacturers delighted in were copied. They found a ready sale in Germany and England especially. But novelties were soon in demand, subjects that harmonized with the new style in furniture and decorations. So the Vienna porcelain painters took up a great variety of subjects, such as are pictured on the modern post-cards, prints, and photographs. As they paint and gild the objects they adorn they thought themselves perfectly justified in taking subjects from objects which could be bought for a penny. But German firms thought otherwise, and they have sued the three prominent Old Vienna porcelain firms for having copied photographs and post-cards which were their property. Heavy fines have been imposed, with the immediate consequence that a number of porcelain painters have been dismissed by their employers. They have now addressed a petition to the government, in which they plead that the manner in which they reproduce a subject from a print or photograph cannot be considered a theft, as would be the case if they photographed or printed it, and sold it by the thousand.

The porcelainites try to work the sentimental side of human nature, and bewail a threatened "art industry"—threatened through the rapacity of photographers. It seems a lesson beyond the grasp of the average mortal that a photographer has any rights. We are all born honest—of course. But well-lighted streets are a powerful factor in keeping honesty at par.

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PORTRAIT

Pach Bros., New York

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Pach Bros., New York

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THE LATE HENRY MORTON, Ph.D.

President of the Stevens Institute, Hoboken, N. J.

(See article on another page)

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SOME LENS TESTING INSTRUMENTS.*

BY WILLIAM TAYLOR.

I WISH to describe to you to-night three instruments which are used for testing lenses by my firm in Leicester. These were made by us for our own use. I have brought with me two of the instruments, and will show you a photograph of the third; but I have brought part of it, which is the chief part of interest.

In order that the special features of these instruments may be clear to you I should state that they have been developed in connection with our manufacture of the lens which is known as the Cooke lens. For that reason I shall have to ask you to allow me to show you first a section of the Cooke lens in order that you may appreciate the uses of some parts of these instruments.

FIG. 1.

Fig. 1 shows a section of the Cooke lens. The lens, as you know, consists of three simple glasses, a negative glass between two positives. In the course of assembling these lenses we have, as part of the construction of the lens mounting, means of moving the middle glass by the use of screws which are shown in Fig. 2. The purpose of these screws is to enable the middle glass to be moved or tilted about in any direction and moved laterally so as to bring its own axis into accurate coincidence with the axes of the two positive lenses.

As shown in Fig. 2, the middle lens is fixed in a circular rim of metal which is attached within the body of the mount by means of screws at *a*, *b* and *c*. There are two screws at each of these points, the larger ones with heads holding the metal rim downward, and the smaller ones projecting behind the rim like feet, by which it may be lifted. By using these three pair of screws it is possible to incline the axis of the lens within limits in any direction. Again at *d*, *e*, and *f* there are three other screws which serve to move the lens laterally; and these nine screws are used in the process of assembling every Cooke lens in order to get accurate centring of the system.

In Fig. 1 it will be seen that the rim of the front glass is held between two screwed rings, so that by unscrewing one ring and

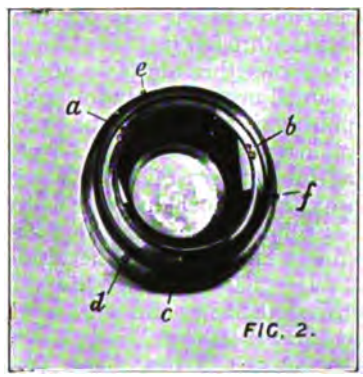

FIG. 2.

screwing up the other, the front positive lens may be moved toward or from the negative lens without being displaced laterally.

The object in adjusting these lenses is not only to bring the axes of the several glasses into coincidence, but also to ensure that the axis of the lens as a whole is normal to the shoulder of the flange screw. For in modern anastigmatic lenses, which have a comparatively perfect flat field and fine definition throughout that field, there is much greater necessity than there used to be in the days of the older lenses for care in adjusting the plane of the image into coincidence with the plane of the sensitive plate. And for this reason we make it

* A paper read before the Royal Photographic Society, October 22, 1901. Published by the courtesy of the author.

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our object to set the axis of every lens accurately normal to the plane of the flange screw shoulder. You will see more fully the importance of this presently.

These adjustments of the component glasses of a Cooke lens, the tilting of the middle glass and the longitudinal adjustment of the front glass are made by the aid of instruments like one which I have brought for you to see.

Fig. 3 shows a top view or plan of the instrument. At *a* is a small gas jet and in front of it a metal plate with a pinhole in it. At *l* is a collimator lens which receives light from the pinhole and renders it parallel. At *c* is the lens to be tested which forms at *d* an image of the pinhole which is inspected with the eye-piece at *d*. As shown in the figure the lens is placed with its axis obliquely to the axis of the testing instrument itself. The lens is in fact mounted on a turntable so that it can be inclined in this way and turned in any direction to allow the light to pass obliquely or otherwise through it.

Fig. 4 shows this turntable at *c* with a lens mounted upon it ready for testing.

In putting these lenses to be tested into the collimator instrument the lenses are screwed into flanges of which several are shown in Fig. 5, including one with a lens in it. Each of these flanges has an internal screw which receives the lens to be tested. It has also a rim or flange proper of standard diameter and thickness which is turned in the lathe at the time when the screw is cut so that flange and screw are perfectly concentric.

Fig. 6 is a top view of the lens holding turntable, showing the groove *a* into which the lens flange is placed and the pivot *b* of the turntable.

It will be noticed that the flanges shown in Fig. 5 are of various lengths. The reason of this is that in turning the lens around upon the turntable to deal with light passing through it obliquely, the image would be displaced sideways unless the nearer nodal point of the lens were in the axis of the turntable. The flanges in Fig. 5 are adapted to bring these points into practical coincidence with the lenses for which they are specially made.

In Fig. 4 such a flange containing a lens to be tested is shown resting in a groove in the holder or turntable upon two little rollers *b* and *c*. With these anti-friction rollers to support it, the lens is easily rotated by the operator while he is looking through the eye-piece at the image formed by the lens. Watching the effect in this way he uses the screw adjustments to move the middle and front glasses of the lens until he gets the image, seen in the instrument, both constant in size and stationary; that is to say, he secures that the system is perfectly centred as a whole while its axis is truly square or normal to the plane of the flange screw shoulder.

When examining the lens in this way the operator moves it to and fro in order to focus the image in the eye-piece and to examine the structure of the pencil of light on each side of the focus.

To move the lens for this purpose easily, as shown in Fig. 6, the base of the turntable is pivoted at *c* to a link *d*, which is in turn pivoted at *e* to the slider *g* which rests stationary upon the main beam of the instrument. The lens being supported in this way upon pivots with but little friction, is moved by means of the knob *h*, and guided in a straight course by the two

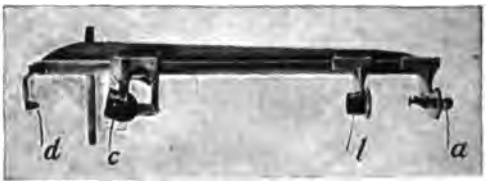

FIG. 3.

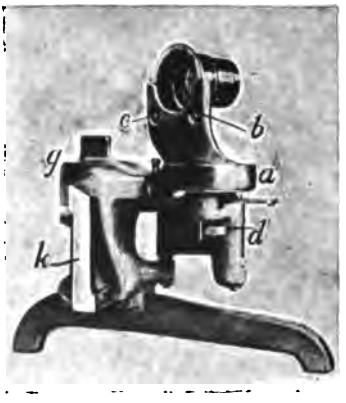

FIG. 4.

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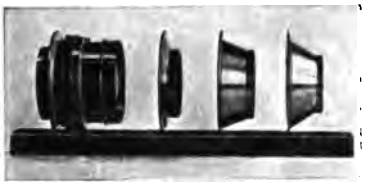

FIG. 5.

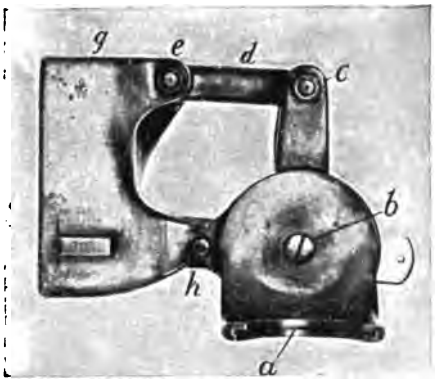

FIG. 6.

abutments near the knob, one of which projects from the turntable base, and the other from the slider *g*. For convenience, however, in handling the lens, and for other purposes, the lens holder may be swung out sideways on the pivot *c* and may be clamped securely in any position by the screw shown at *d* in Fig. 4.

In this figure the slider *g*, which carries the turntable and the sensitive focusing motion, is shown resting upon the main beam *k* of the instrument from which the eye-piece has been removed. It rests upon this beam, being capable of sliding upon it for making rough adjustments in focusing, and the form of the beam is such that gravity alone takes up any wear of the sliding surfaces, and at all times prevents looseness or side shake. The section of this beam presents what is known to mechanics as a V and a flat, and in this case two of the three operative surfaces are placed vertically so as to avoid as much as possible the collection of dust upon them. Dust is a great enemy to the usefulness and life of slides in all mechanism. I call attention to the construction of this slide because I wish to point out that camera construction in the present day in many cases is very weak in the design of its mechanism for moving the lens. The slides of cameras are generally very shaky and make it exceedingly difficult to get out of the modern lens the good results which the lens is capable under good conditions of yielding.

Having secured that the axis of the lens is normal to its flange screw shoulder and that the lens is itself optically centred, if we take a photograph of any plane test object, setting the object parallel to the sensitive plate and to the shoulder of the lens flange, the resulting photograph must itself be symmetrical, having all its four corners exactly alike as regards definition. Under such circumstances it is unnecessary to take a test photograph of an entire plate, for a diagonal strip reaching from corner to corner and including the centre of the plate represents completely every zone and portion of the entire field.

The advantage of taking test photographs in the form of such strips is very great, for a number of them may be taken on one plate, and it is very much easier to compare in this way the work of different lenses or the effects of different adjustments of one lens. If one has a large number of full-sized negatives it is impossible to see even two of them together; but with a number of strip photographs on one plate it is a very simple matter to compare and study them more usefully.

Fig. 7 shows a number of test photographs made with various lenses and arranged in this way for comparison upon one plate. (The half-tone process has destroyed all accuracy of definition, but the illustration serves to show the convenience of arranging several test photographs in this way upon one plate.)

These photographs were taken by means of the next instrument which I have brought to show you, and which is seen in Fig. 8, though somewhat imperfectly, suspended from the roof of its home in Leicester. This camera, which is designed for nothing else but making test photographs with lenses, combines within itself a receiver for the plate holder at *a*, a holder for the lens the back only of which is seen at *b*, and the test object *c*, which consists of a long flat board covered with various devices printed on paper, to be

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presently described. The body, or more strictly the backbone of this camera, is formed of two steel tubes, one within the other, the larger one having attached to it by means of suitable castings the test object *c*, a row of incandescent electric lamps which illuminate it, and the lens holder which is at a fixed distance from the test object so as to secure constant conditions for the comparison of lenses. This part of

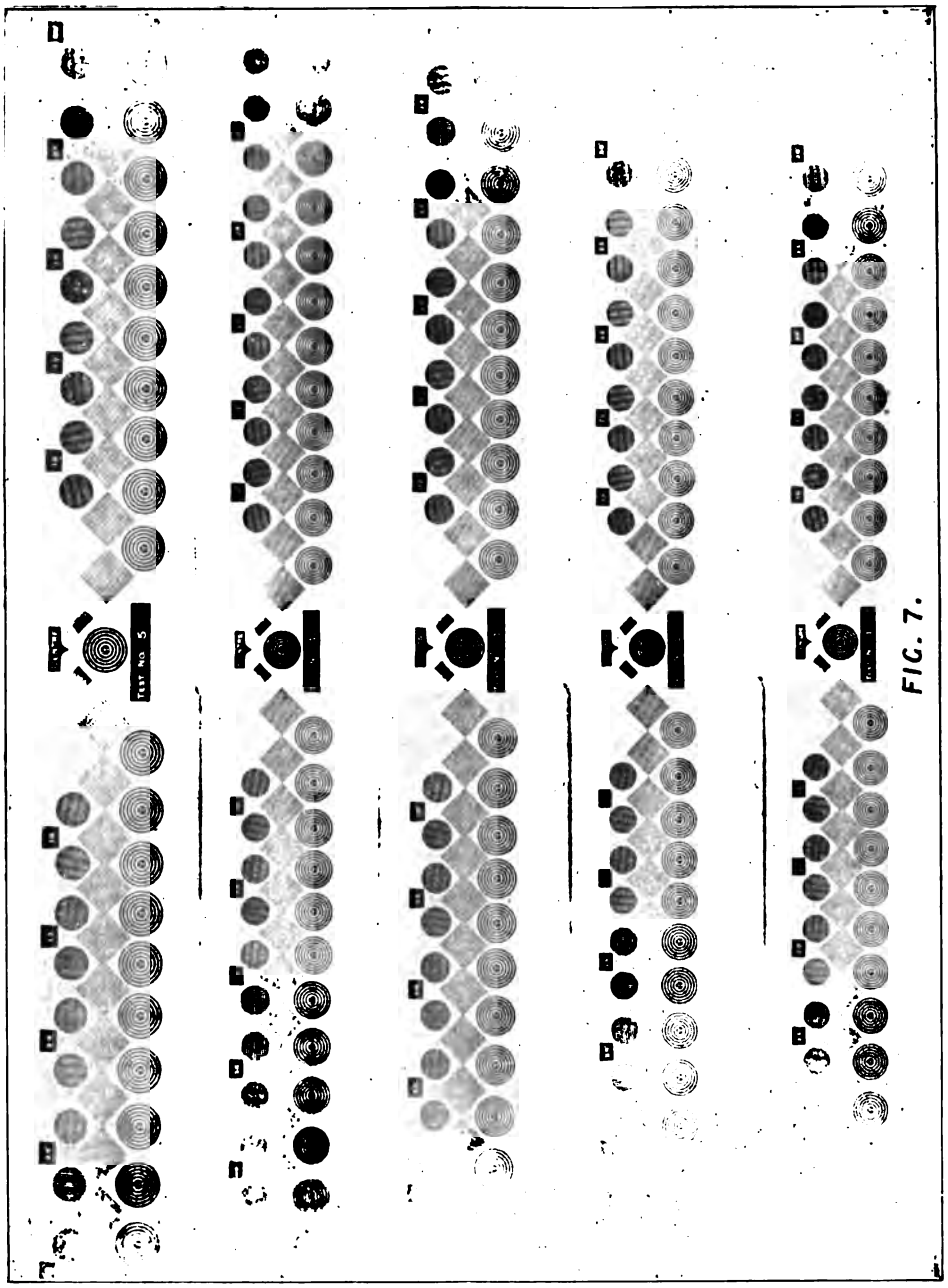

FIG. 7.

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the camera is suspended from the roof of the testing room by means of three chains and helical springs which prevent communication to the camera of any accidental vibration of the building at the time the photograph is being taken.

Such springs as these are well known to process workers; but in this case, in order to provide a means of fixing the camera rigidly while it is being manipulated in focusing, the end of the camera backbone nearest to the lens may be raised or lowered by means of a wire rope passing over a pulley on the ceiling, and so arranged that when the rope is let free the camera rests upon its three springs, but when lifted into the position shown in Fig. 8 it is supported rigidly at one end by the wire rope, while the test object at the other end rests solidly on two crutches fixed to the wall.

The frame *a* which carries the plate holder is connected to the lens holder by the usual bellows to exclude light, but is

FIG. 10.

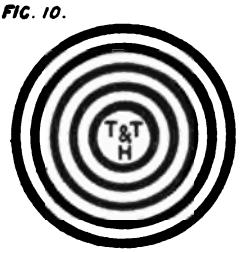

FIG. 11.

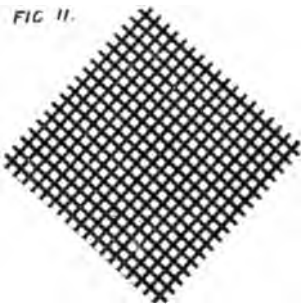

FIG. 12.

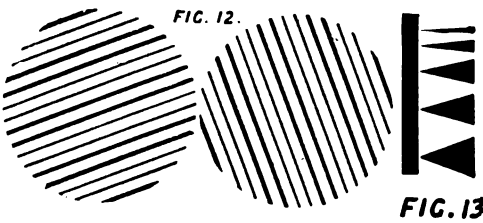

FIG. 13.

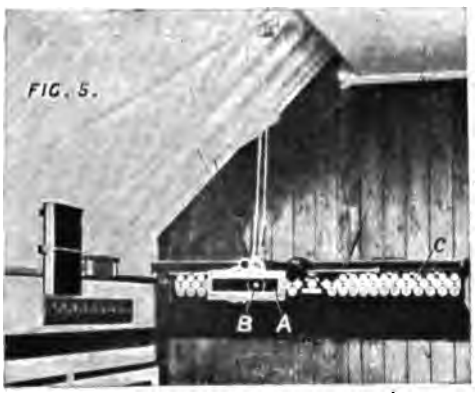

FIG. 5.

FIG. 9.

suspended from the smaller steel tube which slides within the larger tube or backbone of the instrument, so as to vary the length of the camera for focusing. It may be pulled out bodily for rough adjustment of focus, but a lever is provided for fine motions, and a graduated scale upon which focusing movements may be read in hundredths of an inch. In any position the focusing device can be securely locked. Friction between the sliding tubes is avoided by the use of rollers so arranged that the overhanging weight of the plate holder compensates any looseness of the slide, in such a way as to cause the plate holder to remain perfectly parallel to the test object itself and to the plane of the lens holder. It is only with the camera arranged in some such way as this, self contained, and with provision for automatically compensating for the effects of wear, that one may feel certain in comparing photographs taken, it may be with an

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interval of years between, that the differences in the photographs are not due to differences in the arrangement of the camera, and that each photograph represents the best that the lens can do under the given circumstances.

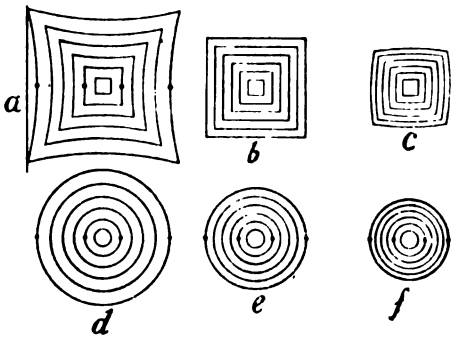

FIG. 14.

In Fig. 9 is shown the back of the plate holder which is designed to receive 15x12 plates, and to present successive portions of the plate to the opening which extends horizontally across the middle of the holder. The illustration shows the wooden covers of the holder removed in order to make clear the three pressure pads which are held down by screws and secure the plate with its sensitive surface held closely in the focal plane.

Figs. 10, 11, and 12 represent the objects which are photographed in this camera, and which are repeated along the length of the test board. Mr. Dallmeyer and some of the opticians present would interest me, and I should feel favored, if they would discuss the convenience of these particular forms of test object which we have found very useful. It may be that they know of better forms. It happens that your lantern objective has a good deal of astigmatism, and I think that you can all see plainly that which is exhibited in the blurring of segments of those circles which are nearest to the margins of the lantern screen. While the circles show at a glance the presence or absence of astigmatism, the cross-hatchings in Fig. 11, which consist of lines four-hundredths of an inch wide with spaces of eight-hundredths of an inch between them, are still more useful in the hands of an experienced person. A person accustomed to that particular cross-hatching can see in the appearance of the structure or texture of the hatching a great deal which he may want to know about the nature of the lens aberrations, and particularly as to whether the error is a complete smearing or spreading of what should be a point of light, or whether it is a partial spreading, leaving a bright nucleus behind.

Fig. 12 shows other rulings which are used in pairs, half of them pointing radially to the centre of the field, and others at right angles to this or tagentially.

FIG. 15.

FIG. 16

(A slide showing a complete test photograph of these objects was shown, but cannot be reproduced here with the processes available.)

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I am afraid that it is rather difficult to see on the screen what I would like to show of the structure of those cross-hatchings near the margins; but I have here the original negative and will pass that around. You will see then the varying appearance of the texture of the cross-hatchings.

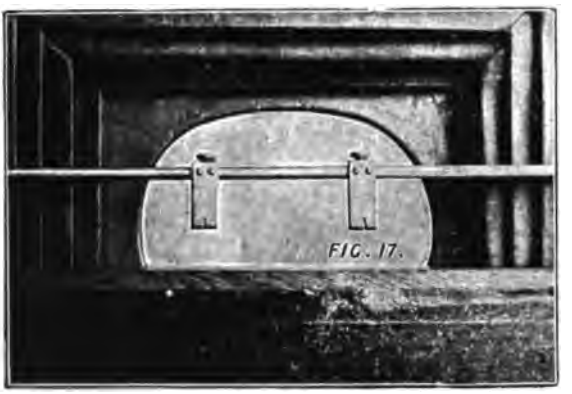
I have called attention elsewhere to the value of a pointed line as an object for focusing, and a slide (Fig. 13) has been prepared to show, if possible, with the lantern here, the way in which a pointed line behaves when it is put in and out of focus. You will see that the line not only becomes blurred, but the solid nucleus which is left behind appears to vary in length. You notice an apparent growth of the black nucleus of the line. That growth is a very useful index of sharpness in focusing, because it is more apparent than is mere clearness of outline. When a line like this is not in the centre of the field, however, it appears to move as a whole, and this movement is confusing. By putting a bar near the point of the line we have a gauge which enables the eye to distinguish between the movement of the whole and the growth of the point which is due to focusing.

Fig. 14 introduces a test instrument which is the third of the series I wanted to show you.

In adjusting these Cooke lenses we have a means of getting rid of linear distortion of the character which is shown in these diagrams; and in order to make clear the principle on which the test is based, I would like just to point out that the series of concentric circles at *e* and the series of concentric squares at *b* include zones of constant radial width. A lens which is free from linear distortion will reproduce such figures and keep the width of zones still perfectly constant.

If, however, the lens has what is called pincushion distortion, the effect is the well-known result shown at *a* for concentric squares, and at *d* for circles.

On the other hand, what is called barrel-shaped distortion is exhibited at *c* and *f* in the narrowing of zones as one gets further from the centre. The old-fashioned way—at least the way in which, as far as I know, it was common to test this fault in a lens—was to photograph some straight line and see if the result was straight. The principle of the new test which I wish to explain is exhibited by the dots upon the circles in the diagrams. At *e* are six circles including zones of equal widths, and the four dots placed upon them are therefore equally spaced. The result of photographing such a diagram with a lens having pincushion distortion is shown at *d* in which the outer pairs of dots are too widely spaced. Obviously the variation in spacing of the dots is a measure of the amount of distortion. At *f* again is shown the corresponding effect upon the separation of the dots, of using a lens with barrel-shaped distortion.



One might of course take any neighboring pair of zones to measure the errors of width produced by the lens; but by taking four dots as shown covering the entire range of the lens or that part of its field which it is desired to use, one gets the greatest possible difference between the

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sum of minimum errors which is included between the pair of dots spanning the centre of the field and the sum of an equal number of maximum errors which is included by either of the outer pairs of dots.

Fig. 15 shows the appliances used in carrying out his test. At *a* is a camera which stands on two rails, a V and a flat, which keeps its axis pointing in one direction wherever it is placed upon them.

Fixed on the wall at *b*, *c*, *d* and *e*, in a plane which is parallel with that of the camera focusing screen, there are four test objects like that shown in Fig. 16. These consist of brass tubes, about three-quarters of an inch in diameter, with slits in their sides, and containing elongated incandescent lamps. These slits are very accurately set, so that the distance between the two in the centre is the same as that between them and their respective neighbors on either hand. When these are lighted up and focused, one gets in the camera four lines which are images of the slits, and which, if the lens used be free from distortion, are equally spaced.

In order to measure or compare these distances, a device is fitted within the camera behind the ground-glass screen, and this with the screen removed is shown in Fig. 17. It consists of two little sliders moving on a rod which is fixed in the camera. The sliders carry little blades of steel with slits in the bottom, the blades themselves when in use lying in contact with the back of the ground glass. In this position, having the four test sights focused on the glass, the sliders are carefully placed so that their slits receive centrally the two middle images. A small rod not seen in the illustration is then clamped to unite the two sliders and fix their separation so that they may be moved together toward either side of the camera to measure the distance between the neighboring pairs of images.

In actual observation it is exceedingly easy to know when the line of light is in the centre of the slit on the slider, because any displacement from the centre has the effect of reducing the margin on one side and increasing it on the other, and the eye perceives this difference immediately. The whole device has proved a very simple and sensitive test, and a valuable assistance in eliminating distortion from Cooke lenses.

I wish to show you the means we use for dealing with larger lenses than those which are within the capacity of these smaller instruments which I have described. The majority of lenses made being small the ordinary testing instruments must be designed with the smaller lenses in view; but when larger lenses come to be dealt with it is important that we should have some equally effective means of dealing with them, although the use of such appliances may occupy more time. Travelling on the same rails as the smaller camera, in Fig. 15 there is a prismatic-shaped box *h* which stands on three feet. The box has on the top of it a plane horizontal surface, and a strip of wood fastened on one edge of this surface serves as a fence or guide against which the box *i* may be set. This box contains a ground-glass screen four feet long, and may be set to reach four feet from the axis of the lens on either side, so that we have a focusing screen which has

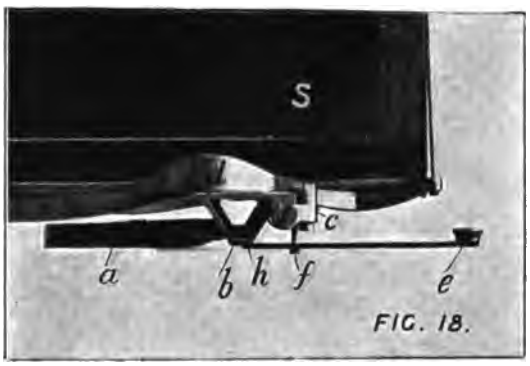

FIG. 18.

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a capacity of about eight feet of length, sufficient for dealing with ordinary large lenses.

The remaining point which I wish to show you is the means of moving the focusing screen of the smaller camera. This is rather a heavy object to move with great delicacy. It would be difficult indeed to move it satisfactorily by means of the forms of slides which are usual with ordinary cameras. So sensitive, however, is the movement of the actual screen that we can repeat the focusing when making certain observations, and ensure that the screen can be brought to rest in the same position, within two or three thousandths of an inch. The means by which this motion is effected are shown in Fig. 18, which represents only a lower corner of the camera back and focusing screen *s* which is actually two feet square. At *a* may be seen a pivot and turntable upon which, for certain purposes, the camera may be rotated. Attached to this turntable is the beam *b* of triangular section which is seen on end in the photograph, but which extends forward and carries both the lens, holder and focusing screen. The section of this beam will be seen to present a flat surface at the top, and a V or guide projecting down from its right-hand edge to be grasped by a correspondingly grooved guide *c* which is bolted to the metal frame *d* which carries the camera back.

The guide *c* is of sufficient length to ensure always the accurate guiding of the focusing screen in a plane normal to the lens axis.

The centre of gravity of the camera back being somewhere over the turntable pivot *a*, and overhanging the left edge of the beam *b* the weight of this mass is sufficient to keep the guide *c* in contact with the V slide on the beam, and any wear of these surfaces is compensated by gravity alone, without resulting in looseness and without disturbing the accurate placing of the focal plane. At the same time the inverted arrangement of the V slide makes it impossible for dust to settle upon it in falling, and thus a common source of friction is eliminated. A hardened steel roller is pivoted within the frame at *d* and rests upon the upper surface of the beam *b* like a foot with but little friction, upon which the weight of the camera back rests. In the operation of focusing the lever *e* is used. This is pivoted at *f* to the camera back, and has at *h* a leather button which, when pressure is put by the thumb upon *e*, holds to the beam *b* by friction and serves as a fulcrum for the lever. The pressure upon *e* which causes this fulcrum to attach itself is sufficient also to pull downward and slightly release the guide *c* from the V slide. It does this sufficiently to reduce the friction of the slides almost to zero, but without actually pulling them apart, and thus the camera screen is left supported almost entirely by the roller *d*, while perfect guidance of the screen is obtained and it is capable of the greatest delicacy of movement. A construction of this sort might get over the difficulties which some process workers find in using modern lenses for their work, in which it is very important to have the focal plane of the camera accurately parallel to the object being copied.

I have taken up sufficient of your time and have but little more to say. Part of my object in showing these things is to show you that opticians—for I have no doubt that we are not the only opticians who take care in these things—do take very great pains in the adjustment of their lenses to get these matters as perfect as possible.

The experience of some of us in putting on the market modern lenses which give fine definition over a large field, is that camera construction is considerably behind the necessities of the case. We have met with instances of process workers who have no sufficient knowledge that the plane of the object which they photograph must be parallel with the focusing plane of the camera, and that the lens axis must be normal to those planes. The reason that this matter is not sufficiently understood probably arises from the fact that with the older types of lens there was not great need to get those planes perfectly parallel, because the marginal aberrations of the lenses prevented the getting of sharp definition; and photographers who are accustomed to the old types of lens do not so readily grasp the critical importance with modern lenses of getting these mechanical matters accurate in adjustment, and the planes of their cameras perfectly true and parallel.

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Mr. Thomas R. Dallmeyer (President) said that he had no critical remarks to make, but on the other hand could endorse what Mr. Taylor had said upon the necessity of perfect centring in lenses. The lecture was most instructive in directing the attention of the laymen to the difficulties that were encountered in the proper centring of optical instruments, and the speaker much appreciated his insistence on the point. It might be of interest, he continued, if Mr. Taylor would explain one condition of his test conditions, viz.: that he placed his test object at a certain given distance from the lens. If perfect correction were attained for one particular near plane it followed as a theoretical condition that the lens would not be perfectly corrected for rays from infinity, for example. Mr. Taylor would perhaps add a few words on the compromise he would make in that respect.

Mr. H. Snowden Ward said that he had been fortunate enough to see the pieces of apparatus described at work in the actual factory, and he could only add that they struck him as being not only ingenious, but as possessing that best part of ingenuity, simplicity, and directness in achieving the end in view. Among the incidental remarks made by Mr. Taylor were one or two suggestions regarding camera construction that were well worth attention, particularly those relating to the building of a process camera, and the method of arranging the base board for the ordinary or rather, perhaps it would be more correct to say, for an extraordinary field camera. There were many things in the construction of the camera in which it was unfortunate that they had to follow the traditions of men who began by putting two boxes, sliding one within the other, behind the lens. Makers of cameras had followed very much on these lines with certain adaptations in the direction of achieving greater lightness, but it would be worth while, for the purposes of a really perfect camera, to go thoroughly into the whole of the construction again. There might be radical changes, some of them on the lines which Mr. Taylor had suggested.

The chairman said that the point with regard to camera construction mentioned by Mr. Taylor was one which all would appreciate, for modern cameras were not made to secure the utmost value out of modern lenses. Photographers were suffering severely from the tyranny of tradition which workmen did not care to depart from. He had a great desire to have the camera front of a certain camera made exceedingly rigid, but he could not get his idea fully carried out. Difficulties were raised by the workman, and every time one argument was met another was ready, and in the end he had to take what he could get.

Mr. William Taylor, in reply to Mr. Dallmeyer's question as to the choice of the distance between lens and test object in the photographic test camera, said that, as he well knew, opticians in all directions had to compromise, and in choosing the distance in question, his firm did so with its experience and knowledge of the Cooke lens, and in view of the fact that the camera was only intended for small lenses, for the special study of such lenses, and for getting more intimate knowledge of their characteristics. His firm chose the distance, believing that it was the most suitable and convenient that could be had for the purpose. In reply to another question he said that the work of the collimator instrument was not quantitative. The turntable was not graduated. The instrument was the third of this general type which had been made. The first instrument had some graduations, but it was found that the assistants who used them became superior to graduations. As a matter of fact they ceased to look at the graduations, getting so familiar with the movements that they did without, and the expense of putting graduations on was thus saved. One of the cameras shown, the camera which is used for the distortion test, has a means applied to it of plotting out all these aberrations right through the field of the lens, but he had not gone into that point because he did not know that there is much new in it, and he thought that he had already enough to describe in the matters which he had been pleased to bring before the Society.

A vote of thanks was passed to Mr. Taylor.

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THE PENNSYLVANIA, WEST VIRGINIA, MARYLAND, AND DELAWARE CONVENTION.

WITH the approach of the convention of the photographers of the above-named States, to be held in Industrial Hall, corner of Broad and Vine streets, Philadelphia, on July 15th to 18th, you may ask yourself, Would it be really profitable for me to go? You may have the money to go, but will hesitate about sparing the time; or perhaps you will have plenty of time, but think you cannot afford the money. Looking at the question regardless of circumstances, I would advise everyone who can possibly do so to make a special effort and go. The time and money will be well spent, as the knowledge gained will abundantly repay you for both. Having decided to go, you will ask, How can I best profit by the convention? To this I would say, when you arrive at the convention, open your eyes, ears, and most of all your *mind*. You will meet in friendly spirit a large body of professional co-workers, like yourself, who are anxious to keep in touch with all that is new and progressive in the photographer's art, and at the same time enjoy new scenes, meet new faces, and exchange ideas which will make you broader and more liberal-minded. This will lift you out of the "ruts" into which we are all liable to fall.

It has always been a puzzle to me why photographers do not more generally take an interest in and recognize the advantages to be derived from attending conventions. I think it must be because many have never been to one at all, and therefore do not know the good to be gained. Those who have attended assert that they have derived much benefit, and are making better work and getting better prices for their work. The question should be, How can I afford to stay away while others are so obviously going ahead? Need I say that it is only those who are deeply interested in photography who "get there." The indifferent are those who mostly make complaint of lack of business, lack of appreciation of the public, etc. What the "dear public" wants is *something new*. If you can give them what they want they are willing to pay for it.

Think the matter over carefully, and see to it that you are in the ranks of those who are progressive and wide-awake in your profession.

The Executive Board have made an earnest effort to give those attending the convention a good time. There will be demonstrations in all departments of photography and a school of lighting and posing. There will be such a display of fine portrait photography as never appeared on the walls at any convention. The manufacturers and dealers will be on hand with the latest and most improved appliances. This feature alone would be worth making the trip to see.

The social arrangements have not been overlooked, and will be ahead of any previously made for any other convention. The committee of sixty or more leading manufacturers, dealers, and photographers are preparing to give all who attend a royal welcome. A free trip to Atlantic City will be a novelty to many; there you may have a chance to revel a while in the glories of "old ocean."

The officers have worked hard to make the meeting of 1902 a successful and profitable one alike to old and young hands in professional photography. Therefore, it is their desire that all who can arrange for a few days' holiday should make an earnest effort to attend. You will find it a thoroughly good investment, and will return home to your studios abundantly repaid for all that it has cost you.

Bear in mind the date, July 15th to 18th.

T. B. CLARK,
First Vice-President.

INDIANA, PA.

PLATINUM has been causing some worry of late owing to its increasing scarcity. Indeed, not long ago some enterprising German proved his possession of a sense of humor by suggesting that the use of platinum in photography be prohibited by law. A report now comes that New South Wales will probably ere long produce platinum in considerable quantities; and the Transvaal will also probably yield a satisfactory supply.

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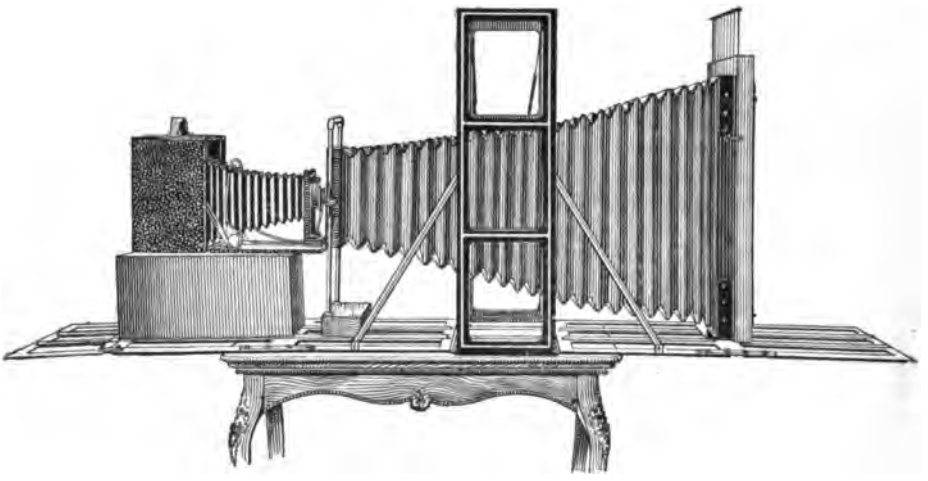
A COPYING AND ENLARGING CAMERA.

BY GEO. B. HUTCHINGS.

BEING an amateur photographer, and realizing the want of an enlarging camera, easy of manipulation, that would do satisfactory work, I have marked out a thoroughly practical enlarging camera, which is shown in the accompanying illustration. The enlarging camera proper does not contain a lens, and is intended to be used with any open-back camera or camera from which the back can be removed. I will now give a concise description of my method of using this camera in making enlargements, although it is so simple that a description is hardly necessary.

The enlarging camera is placed upon a table or suitable support, with the smaller end or front of same pointing toward an open window. The two sides are then lowered into a horizontal position and the front standard is slid forward upon the track. The operator now places his camera upon a suitable support upon the track, with the rear of the camera toward the window, thus bringing the lens into position with the opening of the enlarging camera. The connecting joint is now placed into the opening of the enlarging camera securely, and the operator connects the two by inserting the flange of the lens into the smaller end of the connecting joint. He now takes his plate-holder, removing the centre partition by cutting it out, leaving a narrow edge to form a support or rebate for the negative plate or film to lean against. When films are to be used it is necessary to place them between a piece of ground glass and a clear glass. Place the negative plate or film to be enlarged in the holder, preferably upside down, at the rear of the plate, and put a suitable piece of ground glass for diffusing the light in front of it. Now place the plate-holder in the camera, having previously removed the ground glass of the camera; set the shutter as if for time-exposure, and open it, using the diaphragm at the largest opening.



Passing to the rear of the enlarging camera, pull out the rear standard, and remove from the paper-holder the back, which is held in position by four small bolts. Upon doing so the ground glass is seen to be in position. Take out the slide from the top, thus allowing the light to pass through the window, through the negative plate or film in the rear of the camera, through the lens on to the ground glass in the rear of the enlarging camera, and the picture appears in its enlarged state. Now focus by moving the rear end of the enlarging camera, this giving the size of picture desired, and bringing picture to a proper focus. Having obtained

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the desired size, focus the image on the ground glass and remove the paper-holder from the rear of the enlarging camera.

Place the slide back into position, remove the ground glass, and take the paper-holder into a dark room, where the bromide paper can be fixed to the front side of the back of the paper-holder. The back of the paper-holder is then placed in the paper-holder and secured by means of the four small bolts previously mentioned.

The paper-holder is now brought out of the dark-room and placed back into position in the rear of enlarging camera. The shutter of the camera is closed and set. The slide is removed from the paper-holder, and the exposure is made, after which the enlargement is developed.

I very often find it convenient to pick out some part of the picture that is focused upon the ground glass, and by using a small piece of bromide paper, make a test of the proper exposure without wasting a large piece of paper. I have found, however, that after becoming a little familiar with making the exposure this is not necessary.

I have also made a practice of making a number of exposures, placing them in some light-tight container, to be developed at my convenience. I believe that the photographer will find in this enlarging camera a much more economical and desirable article than can now be had.

The camera can also be used for copying and making lantern slides. Its compactness and small size will recommend it very much for these uses.

LIKENESS.

BY F. IRWIN.

On what does likeness depend? It seems a simple question, but it is one which cannot easily be answered off-hand. Likeness is associated with detail of feature, but such is scarcely a sufficient definition, for we can recognize our friends a block away when not a single feature can be defined. Perhaps likeness lies in the masses of light and shade; but these vary according to the light, or the hat worn, or a score of other variable quantities. It can scarcely be considered as lying in outline, for little of unvarying or distinctive outline is seen except in profile, and we do not see much of our friends by profile. At least it may be considered that likeness at close range depends more on the surfaces than on the outlines of the face. Doubtless the eye is familiar with every detail of feature, every mark, and is equally conversant with every characteristic pose or gesture, and with every appearance of masses of light and shade on the face when at a distance. The eye sees a figure at a distance, and at once recognizes it, without knowing why. It may be a peculiarity of walk or poise of the head. That is all that can be seen at a distance, but for the rest, it is known to the mind of the one who sees, and that is sufficient. A figure is known to a certain extent by its motions; for many persons, especially men, have some peculiarity of gait. But to endeavor to reproduce this peculiarity would in photography lead to disaster; caricature is best able to portray it, and that is a province that professional photography has no wish to enter, though it may occasionally unwittingly stray in that direction. "Arrested motion," as it is termed, is the rock on which such attempts come to grief. But if the suggestions of motion in a figure be beyond the scope of professional photography there is yet left to us the equally characteristic attitude of repose; every man—and every woman—has a characteristic attitude, and in that attitude there is one chief and dominating factor. It may be some beautiful pose of the hands or the placing of the arms. It may be a frown, or a craning forward of the neck, or any one of a score of things. In any full length the appreciation of a characteristic attitude goes far toward success.

The photographer very naturally, and inevitably, makes the portrayal of the face his chief business; but probably a mistake has been made in too much of exclusiveness in this direction. The obtaining of a more comprehensive likeness, as opposed

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to mere detail of feature, is a class of work with possibilities; and is a class apart from the mere pictorial rendition of three-quarter or full lengths. This latter is very beautiful, and has both a commercial and an esthetic value; nor can it be said that we see too much of it. But there is equal room for renderings in which the merely pictorial yields in part to character. This character-likeness is indeed to the figure what expression is to the features, and it is to be obtained in the same way. Without expression, the features, however beautiful or however correctly photographed, are a mask rather than a soul. With it we obtain the life and charm of the true portrait. Expression can seldom be conjured up by the sitter; it must come naturally and spontaneously and without consciousness. There is an art of taking beautiful photographs, which from their beauty are pleasing to all who do not know the originals, and which are considered as likenesses because they are recognizable. There is also an art of obtaining a true likeness—and one not incompatible with beauty or pictorial quality—through a correct rendering of attitude and expression. And this latter is not cultivated as much as, with profit, it might be.

THE NEW EASTMAN KODAK.

DETAILS of the plan for the consolidation of all the Eastman Kodak enterprises of whatsoever name and nature in the world have appeared in the public prints of late. The aggregate cash value of all these enterprises is estimated at $20,000,000, and the capital stock of the consolidated corporation is $35,000,000. The corporate name of the new company is The Eastman Kodak Company. It was incorporated a few months ago under the laws of New Jersey, but none of the details of the reorganization and consolidation have been given out until recently.

The new company has been formed for the purpose, according to the prospectus sent to stockholders, of "acquiring the business and shares of the Kodak Company, Limited, of London, England, including the shares of the German Eastman Kodak Company, and the French Eastman Kodak Company, and also the outstanding shares of the New York Eastman Kodak Company owning the shares of the Canadian Kodak Company, Limited, and a controlling interest in the shares of the General Aristo Company, which latter owns the Photo Materials Company, the Nepera Chemical Company and the New Jersey Aristotype Company, and the shares of the American Aristotype Company, and the stock or business of such other photographic concerns as the directors may from time to time consider desirable.

The business of the various companies to be taken over consists principally of the manufacture and sale of photographic cameras, dry plates, films, papers and other materials, with factories at Rochester and Jamestown, N. Y.; Harrow, England, and Toronto, Canada.

The new company will own and control a large number of patents and trade marks.

Of the new capital stock of $35,000,000, there will be 1,000,000 shares of preferred stock, paying 6 per cent. cumulative dividend, and 250,000 shares of common stock; 46,694 shares of preferred and 149,928 shares of the common stock were issued July 1st. All of this issue is offered in the first instance to the shareholders of the Kodak, Limited, Eastman Kodak Company, of New York, and the General Aristo Company. The executive office of the new company will be in Rochester.

The British holders of Eastman stock have consented to the consolidation outlined above, and now practically effected. Lord Kelvin, the eminent scientist, recently visited this country as the representative of the British stockholders. During his visit to the works of the American Aristotype Company, at Jamestown, N. Y., Lord Kelvin expressed his opinion of things as follows:

"Mr. Abbott has said that there are no scientists in Jamestown, but I have had a most charming and delightful scientific welcome to Jamestown this afternoon. I have seen applications of science of the most interesting kind, not merely the rough-and-ready applications of science which we see

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every day, which do not reach the depths and subtleties of science. But in the factory which I visited to-day there are applications to real scientific problems which I have considered with great interest. I received a really scientific welcome there. I knew a little about those works before. I know more about them now, and I hope to know still more hereafter.

"I feel that my association with Mr. Eastman in the great company which he has created has been a continued pleasure to me, and has given me more enjoyment in the application of science to the uses of mankind than almost anything I have ever been associated with. In Mr. Eastman's work science is applied with marvellous results, and wherever you go through the civilized world the results of Mr. Eastman's labors add to the enjoyment of life. I have had a day in Jamestown which I shall look back upon as a landmark in life, of which the memory will be with me as long as I live.

"The success of the photographic work here depended on knowledge, invention, and science, and because the founders of this industry were not satisfied with imperfect results it has become one of the most interesting and valuable applications of science that is known. The great success of the work speaks for itself. Photography as developed by these allied companies is not only an amateur pleasure, but in art it has become an institution of great value. Mechanics, engineering, scientific research of all kinds, are aided by the photographic process. The properties of the stars and their characteristics are discovered to us by photography. I mention this to show the grandeur and dignity of the work of photography as exemplified in these factories at Jamestown and Rochester.

"My close association with Mr. Eastman is a great gratification to me, and my connection with the Eastman Kodak Company as a director is a pleasure. I am proud to be a representative of my English colleagues here."

COMMENTS ON THE PORTRAITS BY ROCHER.*

[We present herewith two letters, concluding the series of comments on the portraits by Henry Rocher, given in the March number of this Magazine. Several other communications dealing with Mr. Rocher's work were received, but they were not considered as adapted for publication. The pictures seem to have awakened many pleasant memories in the craft, and have drawn general attention to the splendid results achieved in portraiture a quarter of a century ago.

The award of $10 offered for the best letter on the pictures has been given to Mr. Gordon Hatfield, of Tusket, Nova Scotia, whose contribution was published in our last issue. A check for the amount has already gone forward to Mr. Hatfield. We desire to explain, in justice to Mr. J. F. Ryder, of Cleveland, whose letter appears herewith, that this gentleman's critique was unfortunately mislaid, and the letter now published is a later substitute. "It was written," says Mr. Ryder, "not in competition for the award, but as an affectionate tribute to an old master in photography."—Ed. W. P. M.]

III.

Dear Mr. Wilson: For the pleasure you have given your readers in reproducing the Henry Rocher photographs of twenty-five years ago, as a showing of American photography at that period, I give you herewith my hearty thanks, as doubtless many others have done.

These pictures carry me back to the days of twenty-five to thirty years past, and open the doors to his fine studio, where I passed some profitable hours in studying his work, and listening to his talk. He was always inspiring and instructive. I felt honored by his kindly attentions and realized that I was in the presence of a master.

The sincere worker of the present day may look at the work of Mr. Rocher and ask who surpassed it twenty-five years ago?

* Papers I. and II. appeared in this Magazine for June.

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He may be asked how many surpass it to-day? Henry Rocher was certainly in advance of his time. There was no sham or pretence in him, nor in anything that entered into his work—it was genuine. The furnishings and fittings; his furniture, his draperies, hangings, rugs, etc., were real. His lenses were the best that could be bought; he called them "his children" and cared for them tenderly, keeping them in a safe which was lowered each night into the basement of the building.

Even in collodion days he used for his portrait work rectilinear lenses, which were considered too slow by other photographers. We have only to examine the examples reproduced in the March MAGAZINE to notice the delicate detail in the white draperies, the gentle rounding of shadows in faces and arms, the depth of effect in the pictures throughout, to recognize the wisdom of his selection. The "chewing of the string as a test of the pudding" is well exemplified here.

I was present one day when a messenger presented a note to Mr. Rocher, who seemed embarrassed in the reading. He scowled for a few seconds, then the usual kindly look came back into his face as he turned to the boy and said, "Tell my neighbor I cannot lend my children. I am sorry he asked me." He explained to me after the boy had gone that the messenger was sent to borrow one of his lenses.

The whims and fadisms of to-day had not entered into photography in Rocher's time. He followed no man's fancies but his own. Common-sense, conscientious photography, without frills, as he saw it in his day, was his aim. He was exacting with his help, and did not always find the sympathy from them he expected. He knew what he wanted and how he wanted it done. He would spend an hour with the man who cleaned his negative glass to train him to do it properly. In all his work, at every step, must be the integrity of Henry Rocher. Failing in any point to do things just right was by him construed as an injustice to him, and through him to his patron.

Telling me one day of his trials with his employees who thought they knew better than he what were best methods, and where they were right and he wrong, he said he had suffered most from men who had written books of instruction. He said he would sooner take a farmer boy and train him his way than have a writer of books upon the subject of photography.

Years may pass and new men replace the old ones; we may have "impressionism," new schools, advance styles, "smudge" and "hazy" instances of the "utterly utter." The admirers of this style of work may say, "how perfectly dear" and give utterance to silly expressions concerning it. And perchance they may occasionally stumble against a really good portrait by Rocher, made a quarter of a century ago, and wonder "where they are at."

Respectfully,

JAMES F. RYDER.

CLEVELAND, O.

IV.

DEAR SIR: I have been much pleased and delighted with the examples of portraiture taken twenty-five years ago by H. Rocher, of Chicago, which you have reproduced in the March number of your MAGAZINE. They take some of us back to our earliest years in photography in point of style of dress and the accessories used, but how immeasurably superior to the general run of work done at that time! One has recollections of having seen rare examples of beautiful work, of the expression of the artistic spirit in lighting and posing; but how rare! These pictures come upon one as a surprise, expressing as they do so much originality of conception, beauty of pose and composition, and excellence of technique.

The motif in each case is clearly expressed; the sitters had evidently entered into the spirit of the matter, and by their sympathetic pliability enabled the photographer to produce the beautiful examples of his work which we have before us. Rocher must have loved his work. This is apparent in every line and every detail. In the group of two, which is used as a frontispiece, what simplicity and naturalness we see, and at the same time dignity and intentness of purpose. The accessories are suitable and home-like. The

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ladies are evidently much interested in the cards which are spread out on the table—one seems to be telling the fortune of the other—but each expresses her share in the matter extremely well. And yet there is no over-straining for effect. The expressions are natural and simple, the pose of hands and figures graceful, and the whole composition is pleasing and satisfying to the eye.

How much better this is than the stiff groups of two we see even in this day, when too often one figure is made to sit down and the other to stand, both without occupation or apparent reason for their so standing and sitting beyond the very obvious one that they were being photographed.

The other examples given of Rocher's work are also full of interest. They are instinct with life and movement. Perhaps some of them might be thought to be a little too theatrical for plain, every-day people, for in these days we repress ourselves and present only a formal outside to the world. But Rocher's *intention* was right. He wished to give something more than the mere passive, characterless presentment of the face and lines of the form, and he succeeded admirably in many of these instances. These pictures are refreshing, and I thank you for reproducing them. They should be a stimulus to many of our present-day photographers to try for greater variety in their poses, and to introduce more character into their work. Let us have more life, more go, more *reality* in the treatment of our sitters.

OPERATOR.

V.

PERMIT me to express my pleasure in the reproduction of examples of the late Henry Rocher's work in your MAGAZINE. I am one of the few remaining assistants of Mr. Rocher, and well remember the very practical difficulties with which he had to contend in those days of collodion. It was wonderful to see his mastery over all the details of his work, whether technical or artistic, and he was scrupulously exact in his requirements. I know of no one who could surpass him in his own times.

Since my service with Mr. Rocher I have travelled a good deal, and seen much in photography. But with all our modern improvements and inventions, our ready-to-use plates and materials, I confess I have not found many photographers as well able to use their tools as Mr. Rocher used his. For this reason it gladdened me to see a few specimens of his work and to read your praise of his skill.

O. HAKELIER.

ROCK ISLAND, ILL.

THE LATE DR. HENRY MORTON.

ELSEWHERE in this issue we present an admirable portrait of the late Dr. Henry Morton, president of the Stevens Institute of Technology, Hoboken, N. J., who died in this city May 19th after a short but painful illness. In his passing we mourn, and American photography loses a lifelong friend and co-worker. When this MAGAZINE was established, in 1864, Dr. Morton, then a young professor at the Philadelphia Dental College, and his father, the Rev. H. J. Morton, D.D., gave us a large measure of help and friendliness. The Rev. H. J. Morton's contributions to our pages, dealing with the philosophical side of photography, will be recalled with pleasure by our oldest readers, and were a decided encouragement to us in our first attempts in journalism. About the same time Dr. Morton accepted the secretaryship of the Franklin Institute of Pennsylvania, lecturing upon various scientific topics for the securing of funds for the Institute.

Dr. Morton was born in Hoboken December 11, 1836. After a brilliant course of studies at the University of Pennsylvania, and a few years of outside work outlined in the preceding paragraph, he was called, in 1868, to the chair of physics and chemistry in his University.

In 1869 the United States Nautical Almanac office was organized to make photographs of the total eclipse of the sun on August 7th in Iowa. In connection with

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these observations Professor Morton was the first to prove the true nature of the bright line on the sun's disk adjacent to the edge of the moon, which is seen in partial eclipse photographs. By later experiments he proved conclusively that it was simply the result of a local development, and was, in reality, a photograph instead of an optical phenomenon. Professor Airy at first doubted the explanation, but, after reading Professor Morton's paper, acknowledged that he was right.

About this time Edwin A. Stevens, of Castle Point, N. J., "endowed an institution of learning." In 1870 Professor Morton was chosen president of the new institution, which became known as Stevens Institute of Technology. One of the chief tasks of the new president was to make the new school the first whose exclusive object was to teach mechanical engineering as a profession. From the beginning the head of the institution worked indefatigably. In 1880 President Morton presented to the trustees a new workshop fitted up with steam engines and machine tools at a cost of $10,000. Electricity was introduced three years later into the domain of mechanical engineering, making a new branch of the Institute necessary. Dr. Morton gave $2500 for the purchase of electrical apparatus and machinery, and guaranteed the salary of the instructor taking charge of the department. In 1888 he presented $10,000 to the trustees to establish a class of engineering practice, and in 1892 gave the sum of $20,000 in 5 per cent. bonds for its further indorsement.

The trustees of the Institute established the Morton scholarship in recognition of these gifts.

In 1878 Professor Morton received an appointment to the United States Lighthouse Board from Secretary of State Sherman. He was regarded as one of the leading scientific authorities of this country, and figured in many celebrated patent litigations. It was from this source principally that he was enabled to make endowments to Stevens Institute. During his early career as college president Professor Morton spent considerable time in original researches, some of which developed results of considerable scientific interest. Among the most important of these was that on the "Fluorescence and Absorption Spectra of the Uranium Salts."

Thallene, which possesses the property of fluorescence to a great extent, was discovered by President Morton shortly before the arrival in this country of Professor John Tyndall, in 1873.

Professor Morton was the first to make a thorough investigation of the Edison incandescent lamp and announce its great value. During recent years he contributed articles on electricity and fluorescence to *Johnson's American Encyclopedia*, and was also a contributor to the principal scientific journals here and abroad. Many of his lectures dealing popularly with scientific questions have appeared in earlier volumes of this MAGAZINE.

In connection with the twenty-fifth anniversary celebration of Stevens Institute, in 1897, he placed in the hands of the trustees stocks, soon afterward sold for $24,000, to be applied toward what is known as the alumni building fund. In 1900 and 1901 he erected at a cost of $15,000 a boiler-house and boiler to supply the entire group of Institute buildings with steam, and in the spring of 1901 he placed in the hands of the trustees $50,000 in 5 per cent. bonds, to be used as an endowment fund, interest to be devoted, first, to the maintenance of the alumni buildings, or, in-so-far as not required for that purpose, as retiring pensions for any professors who might become disabled by age or sickness while in the employment of the Institute.

In 1873 President Morton was elected a member of the National Academy.

In June, 1897, he received the degree of Doctor of Science from his alma mater, the University of Pennsylvania, and of Doctor of Laws from Princeton University.

The London *Times*, in its account of Dr. Morton's career, speaks of him as one who exercised a profound influence upon the development of the higher qualities of business in the American manufacturer and workman.

As president of the Stevens Institute he had absolute power to select the original professors and teachers, and he exercised the selection without interruption from the organization of the Institute in 1870. He

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formulated its curriculum, which has so stood the test as not only to ensure the success of the school, but to find imitation in nearly every part of the world. Dr. Morton was one of the most proficient of the engineering experts known to America. He lavished his large income upon the Institute with great freedom.

FLASHLIGHT PORTRAITURE.

EXTRACTS FROM DEMONSTRATION GIVEN BY FELIX RAYMER BEFORE KENTUCKY AND TENNESSEE CONVENTION OF PHOTOGRAPHERS.

In using a flash machine one must first be familiar with the use of the skylight, after which the use of the flash becomes comparatively easy.

Do not think that it is guesswork or a "happen so" when a good effect is secured by flashlight, for it is not. It will require close study and application.

For those just beginning the use of flashlight, I would recommend that they first make up by daylight the effect in lighting they wish to secure. For example: If you wish to make what is known as a "broad effect" or "plain lighting," do so first by making it under the skylight and afterward place the machine *directly in the source of light as it falls on the face from the skylight.* Then, if you wish, the curtain may be drawn over the skylight, cutting out all daylight. This, however, is of no importance, as the flash is so much more powerful than the daylight that all effects from the skylight are lost in the intense light from the machine.

From these remarks we see that it is first necessary that we *know what we want to secure*, after which it is an easy matter to place the flash-machine.

After we have made up the "broad effect" by the skylight, if we will step back and look at our skylight we will see that the light is falling on our subject *slightly from the front.* That is, there is more of our light in front of the subject than there is in the rear. This being so, we must place the flash in the same way. I would recommend that at first a small source of light be used for making up the lighting, as its effect can be more easily seen, and it will be much easier to place the machine directly within a small source than in a source falling from the whole skylight.

Now, for another example, take Rembrandt lighting. In this effect we are working on the shadow side of the face. That is, the shadow side of the face is toward the camera, and the light is falling on the far side of the face, *or slightly in the rear of the subject.* When you have made this effect, if you will notice your skylight you will see that it is so. Therefore, the flash must be so placed as to give that effect. So we learn that what we want in "broad lighting" is to have the light falling from the *front*, and what we want in Rembrandt is the lighting from the *rear.* In other words, use your flash-machine *just exactly as you would your skylight.* There is positively *no difference.* Try to imagine the flash a miniature skylight, and you have it. Of course, it should be placed nearer the subject than the skylight; not that it makes the picture better, but it takes less powder. The further from the subject it is the more time it will require, or more powder. After a few trials it will not be necessary to have the skylight. I only suggest the use of one for beginners, so as to guide them. When it is once understood what is wanted, and a *liberal amount of self-confidence* has been obtained, it will be found simple.

In the use of a reflector, one of *white* goods should be used, as the flash is so brilliant that it will take strong reflection to balance the lighting.

In making groups I always place the flash-machine on *what would be the shadow side* of the face were I using the skylight—that is, of course, provided I am working under a skylight. Leave the skylight entirely free from curtains, and when the negative is developed it will be found that the flash was so much more intense than the skylight that the side of the face next

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to the skylight is the *shadow side*. By using it in this way we do away with the use of a reflector, and the group will be evenly lighted at both ends, which all know to be a great advantage.

I hardly see any advantage in using the flash for anything smaller than 8 x 10, as we can make small work quick enough by daylight. But when we consider that for an 11 x 14 an exposure of from ten to fifteen seconds by daylight can be made in the twentieth of a second by flashlight, the advantage can at once be seen.

In my work I use the Cramer Crown Plate, and find that for an 11 x 14 or 14 x 17 plate it will take about one ounce of powder. This will give strong, crisp, snappy high lights and delicate transparent shadows, with all the gradations and middle tints well preserved.

The flash is especially fine for white drapery, it not being necessary to screen it from the light at all. The plate used will, of course, have something to do with this, some retaining the whites better than others.

In developing do just as you would if you were using daylight, except that the negatives should be carried just a *trifle* further, as they fix back rather more than daylight. I will now give you my developing formula for this work:

No. 1, Carbonate Potassium, test (hydrometer) . 40°
No. 2, Sulphite Soda, test (hydrometer) . 60°
No. 3. Water . . 24 oz.
Oxalic Acid . . 12 grs.
Pyro . . . . . 1 oz.
To develop, take 1 ounce each to 8 ounces of water.

This formula I have used on the Cramer plate, and think it will fill all requirements. By a modification it would likely suit other makes.—*Trade News.*

MY CLEANING UP.

BY F. STANARD.

HAVE you ever gone into the reception-room of some leading photographer and felt as though you had entered a Chicago hotel? I have, more than once, and I have wondered if so much display helped any in the quality of the work done. But whether or not, I have come to the conclusion that such display in greater or lesser degree, according to the calibre of the business, is a good paying investment. In the case of the poor photographer, at any rate, people no longer associate "Bohemianism" with art, but rather with shiftlessness; and they would as soon go into an unkempt reception-room as into a dirty drug store. And why not? Whatever may be the case in the gallery itself, the reception-room is no workshop, and there is no excuse for keeping it like the public room of some wayside railroad depot. From all that we see and hear our leading photographers—such men as Steffins and Falk and others—not only do good work, but also keep their studios as though they were palaces. Several firms have started very recently, and at once, by sheer clever investment of capital, have taken a leading place—financially speaking—among American studios. There is no doubt about it; appearances go a long way, and an inviting reception-room is mighty comforting to a customer, and does its share toward inducing that pleased expression.

I have often wondered how some fair ladies appreciated the dressing-rooms that some photographers offer. I have seen them furnished in a style I would feel ashamed to arrange for a hired girl. A tiny dressing-room is often an unfortunate necessity; but it may at least be clean and wholesome.

More years ago than I care to count, I had to go out West on a long visit. I couldn't afford it, but it was a necessary matter of health. I left the business in the hands of a brother and an assistant. My fellow townsfolk knew why I had gone, and they didn't take their custom away. All the same, things were not flourishing, and when I came East in the fall, after nearly a year's absence, I felt that things had to be wakened up somehow. I went into the gallery, and I never felt so ashamed before. One corner was littered up with useless accessories that just *wouldn't* look tidy. The rest of the floor was littered with

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things in use, but they all had a tired, seedy look, as though they had lived a twelve-month in a barn. The studio was papered and the paper was faded. The cameras were battered and their brass work tarnished. But why add to the list! Now there was not, perhaps, a single thing in the studio that would not do its work just as well as though it were new down from Anthony's. But as for looks; well, it rather suggested a junk store. It was a lesson to me. Those things had been going from bad to worse, in appearance, under my eyes for several years, and I had been blind as a bat. Coming fresh on them after a long vacation, I saw the nakedness of the land, and could have kicked myself. I had no money to spend on decoration, but luckily I had sense to see that little as I could afford cleaning up, I could less afford leaving things as they were. I hired two scrub-women; they drank lots of beer at my expense, but they scrubbed the gallery from top to bottom. Labor-saving appliances were not so fashionable in those days. They were not content with mopping; it was real old-fashioned scrubbing —knee work.

The skylight sashes were scraped, and I painted them every one. The blinds and screens were washed, and the backgrounds were touched up. One or two of the accessories were scrubbed until the naked lumber foundation showed, and I was secretly glad to see them come to grief. The woodwork was washed with soap and water, and polished with some cream which one of the scrub-women supplied. The metal work was polished up, and I began to save for new paper. I may have made many mistakes since those days, but I have tried to keep clear of signs of poverty or carelessness. They don't pay. I don't believe that half the untidy photographers know that they are untidy. They just gradually drift so, as I did. But if they wake up to the fact that they are untidy, let them also discover that it doesn't help any in pleasing customers. Call in the cleaners and decorators; or if the wad won't stand it, then call in the mop brigade, and invest in a few pounds of paint.

OUR PICTURES.

THE illustrations of the MAGAZINE this month will interest our professional readers as presenting the every-day portraiture of a typical New York studio—that of Messrs. Pach Bros., at the corner of Twenty-second street and Broadway.

With a single exception the pictures are the work of Mr. M. Hammer, who at present has charge of the skylight in this establishment.

The public favor which has so long followed Messrs. Pach Bros. is seen in these pictures to be well deserved. Skilful portraitists themselves, they wisely employ skilful workers in every department, so that all the work of Pach Bros. many studios is marked by its uniform good quality, although varying in style and effect.

We compliment our old friends upon the constant growth and improvement we see in the work sent out from their establishment, and Mr. Hammer deserves praise for his share in this growth. His pictures have the charm of simplicity and good technique. We feel sure that portraits such as he gives us in these pages must give satisfaction to the customer. And that, after all, is the point of chief importance in portrait photography as a business. Our readers can find the moral for themselves.

PRACTICAL METHODS AND HELPS.

Bottles. A cynic has said that but for the hired girl half the potteries would shut up shop. I fear this is a libel on a hard-working section of the hyphenated-American citizens. It is a fact, however, that clumsy fingers—whether of hired girls or of photographers—are the most fruitful cause of breakages among brittle earthen or glassware. A well-trained housekeeper might spend a lifetime among the most

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fragile of "eggshell" china, and with never a breakage. In handling bottles they should be held close to the bottom. This gives a proper balance to the weight, and the bottle is kept well under control. Never try to grasp a large bottle, especially if it is fairly full, or the fingers slippery with sulphite. Let the bottle rest on the table and, holding it with thumb and finger at the neck, tilt it over until the contents flow. Many a good twenty-ounce bottle has smashed when lifted with slippery fingers.

Never keep alkalies in stoppered bottles, or sooner or later the stopper will stick. Stoppers occasionally stick, even when the bottles do not contain sulphite, and a fixed stopper is sometimes a little awkward. Hold the stopper in one hand, and tap it smartly on its end with a piece of wood. If struck on its flat side, or struck with metal, it is more liable to snap off, or if the bottle is held in the hand instead of the stopper. If striking won't move it place the neck for a few moments in hot water, or heat it carefully over a lamp or gas jet. The neck will get hot and expand more quickly than the stopper, and so the latter may be moved. Stoppers are not interchangeable. In washing several bottles be sure that each stopper keeps to its own bottle, or some will fit loosely, and others will stick.

Do not try to pour direct from a graduate into a bottle; use a funnel, and place a match or bit of paper between the funnel and the side of the bottle to allow the air to escape. Do not fill the bottle too full; it is possible to press a tightly-fitting cork or stopper into a bottle which is too full, but the bottle will probably give way.

Prints and negatives are daily marred or destroyed by what might be termed chemical dust. Where, as is often the case, the space is small and conveniences few for the manifold operations of the practical photographer, and, indeed, in all cases, an amount of care is needed in the handling of chemicals that is not often exercised. Hypo is spilled on the floor, it is wiped up with a towel, sponge, or cloth, and that very falsely is thought the end of the matter; for, as the "hypo" dries, a few fine crystals are left upon the floor to form one of the constituents of the ever-present dust. It is spilled upon the clothes of the operator, or his assistant, and again forms dust that may or may not fall upon a print or cling to the albumenized paper as it is hung up to dry. Innumerable cases of spotted prints, the blame for which is often thrown on the paper, are produced from this one cause alone. Where the same room has to be used for all purposes—handling paper, dissolving hypo and other substances, weighing and measuring chemicals, and so forth—the utmost care should be taken to provide against any particle of chemical or drop of solution being spilled upon the floor. But of our own practical experience we are able to say that too often is the greatest carelessness displayed. A cask of hypo lies about; what matters one tiny crystal spilt upon the floor? A quantity of pyro is needed to be weighed in haste, it is rushed on to the scales, particles, perhaps, left on the scale-pan, and many of the slight fibrous crystals wafted in the air; and yet, if a spot appears upon a print done in paper handled in the same room, what surprise is expressed, and how the paper-maker is blamed! It may be truthfully said that the only marvel is there are so few spots, and that the loss from such causes does not mount up to quires of paper and dozens of plates, rather than the few that are heard of.—*British Journal of Photography.*

Chemically Pure Blotters. Ordinary white and colored blotting papers contain sulphites which have not been perfectly washed out of the pulp before passing to the machine. These bodies are added to the pulp after bleaching to get rid of the smell of chlorine, and generally consist of sulphites and bisulphites of soda. Their presence in papers which are used to dry photo prints is fatal to permanent results. To test for acidity: Take a piece of the paper six inches square, place in a saucer, and pour over it distilled water, and work about with a glass rod for five or ten minutes. Now take a blue litmus paper or a little tincture of litmus and test extract, when if either turns red it shows the presence of acid. Divide the extract into two parts; to one add a few drops of nitric acid, then nitrate of silver solution; if a white, curdy

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precipitate is formed it proves the presence of hydrochloric acid or chlorides. To the second portion add a few drops of hydrochloric acid, heat to boiling in a test tube, and add a solution of barium chloride; a white precipitate indicates the presence of sulphuric acid or sulphates. To test for sulphites: Take another piece of the paper, same size as before, and extract with water and divide solution into two parts; now prepare a solution of starch, made by boiling four or five grains of starch with an ounce of water; allow to cool. Get a little tincture of iodine and dilute it five or six times with water, then mix equal parts of the starch solution and the dilute iodine solution; when an intense blue color is produced, add a drop of this blue compound to one of the water extracts of the blotting paper, when if sulphites be present the color will be instantly discharged. Add to the remaining portion of the extract a few drops of silver nitrate solution, when a black precipitate will be formed on heating, if any sulphites or hyposulphites be present. Blotting paper can be freed from impurities; but prevention is much easier than cure. Moral: Use *Royal* or some other brand of blotter which is known to be above reproach.

THE English press has recently contained another account of a photographer who has been poisoned by his chemicals. At the inquest there was no evidence to show any trace of poisoning in the stomach, and the jury returned an open verdict. There are many rumored cases of photographic poisoning, but few of them seem to stand under investigation.

IN Germany they are discussing whether it is legal to go for the manufacturer when plates are bad. If that is the way the wind blows, we shall some day see our American firms opening European branches.

BRITISHERS have just had another instance of American enterprise, a thing by the way, that they are getting used to over there. For half a century they have boasted their famous "Crystal Palace," a huge glass structure first erected in 1851 to house an international exposition. The photographic rights of this place have long been leased to a firm of photographers, and by them have been jealously guarded. At present an exhibition of American industries is being held there, and by a special arrangement visitors are allowed to take their kodaks with them. This is not a concession from the management to camerists in general, but is obtained solely by the efforts of the kodak company, and the permission is limited to cameras of their make.

A WHITE ink for writing on mounts, or in dark corners of photographs is merely diluted Chinese white. The mistake is in diluting the paint with water only. Very thin mucilage should be used.

VOLCANO photography is much "in the air" at present. Brewster, whose name is so closely identified with the discovery of the stereoscope, tells a story in all good faith, in a foot note in one of his books, issued some sixty years ago. A venturesome photographer perched his camera on the edge of a crater, and almost immediately was driven away by an angry outburst. In ten minutes the violence subsided and the man returned to his camera, expecting to find disaster. Instead, his camera was unhurt, and on development, a genuine picture of an eruption was secured.

This would seem to be the forerunner of one of those chimeras "by the instantaneous process" which figure among the dark deeds of latter-day melodramatic fiction.

EDITOR'S TABLE.

AMONG the younger photographic manufacturers few are as enterprising or as well deserving of success as Messrs. BURKE & JAMES, 118 W. Jackson Blvd., Chicago. Their new catalogue, just published, announces a remarkable stock of helps and conveniences for photographers, most of which are the exclusive specialties of this firm. Those who would inform themselves of what is good and new in photographic apparatus and material should send four cents for a copy of this wonderful catalogue. The four cents simply pays postage, the book itself being a goodly volume of 180 pages attractively printed.

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G. GENNERT, New York, has introduced a new flash lamp of practical design, known as the Lieber Lamp. This instrument offers a 20-inch pan for the powder, giving an unusually broad flame. It also has a collapsible stand, can be used at any height up to six feet from the ground, and folds up like a music stand. Price, $6. A descriptive circular can be had on application.

JAMES H. SMITH & CO., 311 Wabash Ave., Chicago, who were recently burned out, have reopened their store, and are filling orders as usual. They advise us of the opening also of a new factory at Huntington, N. Y., by which their specialties can be supplied to Eastern customers without the delay incident to shipment from Chicago. Our best wishes go with this well-known firm, whose reputation has been well established by the merit of their products.

PRESIDENT A. L. JACKSON, of Tacoma, Wash., advises us that the prospects point to a very successful convention of the photographers of the Pacific Northwest at Tacoma, September 17th to 20th. Mr. CHARLES BUTTERWORTH, 782 Kelly St., Portland, Ore., has been appointed Secretary-Treasurer of the Association in place of Mr. F. C. PLUMMER, resigned. Full information bearing on the convention can be had from Mr. BUTTERWORTH.

MR. W. I. SCANDLIN sends us a clever folder designed to get business for the studios using it. It is entitled "A Little Story, a Few Suggestions, and a Logical Conclusion." Our readers should see this folder. Address Mr. SCANDLIN, at 345 Sixth Ave., Brooklyn, N. Y.

ANDREW J. LLOYD & CO., of Boston, send to our table a copy of their *Photographic Encyclopædia* for 1902, containing many articles on practical photography and a valuable reference price list of photographic goods. A copy can be obtained by sending 20 cents to pay postage.

RALPH J. GOLSEN, Chicago, is publishing a new "Mammoth Catalogue," of 276 pages, 8 x 11, with a thousand illustrations and about as many bargains. Readers can secure a copy by sending 10 cents to prepay postage.

THE CRAMER DRY PLATE CO., St. Louis, has published a practical *Manual of X-ray Photography*, written and illustrated by Dr. M. K. KASSALBIAN, of that city. As the booklet contains much useful information, we advise our readers to avail themselves of the opportunity to inform themselves of what is being done in this modern branch of photographic practice. Copies can be obtained without cost on application to the G. CRAMER DRY PLATE CO.

THE BAUSCH & LOMB OPTICAL CO., Rochester, N. Y., announce a photographic competition, open to amateur and professional photographers, residents of foreign countries as well as the United States, the object being to bring together as large and representative a collection of photographs as possible, in order that the present development of the photographic art and the progress in lens and shutter construction which has been made during the past quarter century may be made evident. It is hoped that photographers in general will enter the competition and assist in making it as valuable as possible, both to the competitors and to photography at large. In order to enhance the interest of photographers in all branches of photographic work the awards have been divided into a number of classes, such as landscape, portrait, genre, instantaneous, architectural, interior, etc. Several special awards for telephoto and other work have been provided; also a special award for users of the BAUSCH & LOMB Rectilinear Lenses on various makes of hand-cameras, kodaks, etc.

A special booklet, giving conditions, arrangement of classes, awards, etc., will be mailed free on request.

THE new Isochrom Light Filter, introduced by BURKE & JAMES, of Chicago, for use with the Cramer Instrument Iso Plate, is winning golden opinions from those familiar with that well-known plate. A special circular telling about Isochrom and a ray-filter competition, with many attractive features, can be had from BURKE & JAMES on request.

P. A. OF A.—Secretary C. R. REEVES sends the following additions to the convention hotel rates given in our last issue:

Tremont Hotel, $1.50 and up, American plan; 50 cents and up, European plan.

The Rienzi Hotel, European plan, 50 cents to $1.50.

How to Become a Member of the Photographers' Association of America. Proprietors of studios are required to pay an initiation fee of $3 and dues of $2 a year. Employed help pay only the dues of $2. Send the proper amount to the Treasurer, B. R. BARROWS, 1873 Dorchester Ave., Boston, Mass., who will receipt it and add your name to the list of members. You can join at the convention, but it is better to attend to it before, as you will have to wait your turn at the door if you do not have your receipt ready to admit you. When you are once a member keep up your dues.

THE CARBUTT DRY PLATE AND FILM CO. report a quickly growing demand for their Polychromatic Plate, which is sensitive to the whole spectrum, and therefore of great value in photographing subjects wherein color plays an important part. According to recent tests made by independent scientists this plate is a decided advance in orthochromatism, and well deserves its popularity.

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PORTRAIT OF AN OLD MAN

By C. A. Krausch, Pasadena, California

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WILSON'S PHOTOGRAPHIC MAGAZINE.

EDITED BY EDWARD L. WILSON.

VOL. XXXIX. AUGUST, 1902. No. 548.

CLIPPINGS FROM MAGAZINES.

BY A PEN DRAUGHTSMAN.

THERE is a special rich man's hobby, not perhaps as popular to-day as it threatened a few years ago, known by the name of grangerizing. The name is taken from a certain eighteenth century Rev. James Granger, and is understood to mean the practice of collecting illustrations or engravings from books for the illustration of other books. This practice may be carried to any extent. A copy of, say, *Robinson Crusoe* might be embellished with portraits of the author or of any places contemporaneous with him, or with which he was connected. Places described in the book, both as they then appeared and as they are now; illustrations of Spaniards or mutineers, or "natives," ancient goats or Pyrenean wolves, would be candidates for inclusion in a grangerized copy.

The invention of the practice is calculated to send a cold shiver down the spines of genuine book lovers; it savors so strongly of "newrich" ostentation, and there is a manifestly unsympathetic touch in the mutilating of many books in order to build one which may be, perhaps, admired, but which cannot be *loved*—as a book of any worth should be. The question of the mutilation of books is a difficult one to many sincere minds. We can all sympathize with the person who objects to destroying a dilapidated Bible, however dirty or tattered it may have become; and it is very exasperating to pick up some interesting but second-hand book and find that some former owner has ripped the engravings from it.

When we come to the question of ephemeral literature the conditions and values are considerably altered. The entire mission of the average magazine is to interest or instruct during its own generation, which may be a week or may be a month. As the next publishing day draws near it grows old, and is ready to go the way of all flesh. It is a dreary sight to see—in the lumber-room—stacks of old magazines. Some day missing parts will be obtained, sets completed, and the volumes bound. But long before that eventful and ever-in-the-future day arrives there comes the day for removal, and then the papers are made over to the junkman to the accompaniment of a sigh of relief. Anything of value may be accounted as dead if shelved away in some old magazine.

What is objectionable with books of value—not money value, but value from a craftsman's or book-lover's viewpoint—is quite legitimate in dealing with current periodical literature. Most magazines, if they are worth anything at all, contain some note or illustration worthy of saving. If the note is left in the magazine, then the latter is saved and added to the useless lumber-room accumulation. It is much better to tear out the interesting item, and then boldly consign the useless bulk of matter to the waste basket. A note need not be of purely photographic interest. The photographer is a little too apt to stick to his photographs; to study too exclusively his own trade's means to the end, and to neglect the works of those who

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use other media. There are ideas to be obtained from many sources, and, more even than conscious ideas, there is a breadth of idea to be absorbed from general observation.

Why need ideas be collected at all? Is it not sufficient to note them as they occur, and keep them in memory for further use? Very few minds are quite able to lay hold of any fact from one cursory glance, especially if that fact is one expressed by an artist's pencil. The idea is lost in a very short time. But filed in a book of remembrance they are safe to hand when required.

An elaborate system of filing and indexing notes is sometimes advocated. Perhaps this may be of value to a journalist, but to the average man I think it must appear a little intricate and over-particular. My own collection is on the illustrative rather than the letter-press side. I have more than once been pulled up short by a treacherous memory when I have been drawing, say, some animal scene. A glance through my book of animals, and I am put right.

My system, if so it may be called, is simple in the extreme and effective for my purpose. I keep a dozen large envelopes in my desk into which subjects are consigned as I glean them from some paper. One contains natural history subjects, another shipping, railroad and kindred subjects, and so on. The pictures of more human interest are divided into children, men, women, uncivilized foreign races, costumes, street scenes, etc. By thus sorting them into envelopes I avoid that "lack of continuity" which characterizes so many scrap-books. The different envelopes are gone through about once a year. An evening's congenial work piles the prints in some consecutive order, and they are ready for my daughter to paste in at her leisure. The pages of a scrap-book are rapidly turned over, and in less than five minutes I can locate any print I want.

In this article there is plain confession of what is a common practice among artists —we work from the sketches of others and not from life; and so we have made certain falsehoods of forms as though they were truth. There is much talk among artists as to the status of photographers. We newspaper artists have no fool notions on the subject. When we compare a collection of photographs of animals culled from the magazines of the past three years with the wood-cuts of thirty years ago we have not much to say. The artist is in many ways more indebted to the photographer than is the latter to the artist. But if the photographer supplies details of fact, he receives from the artist in return many happy suggestions of line and pose and composition.

NEGATIVE DENSITY.

In a recently issued little book dealing with the all-important factor of development there is no word as to when a plate is *sufficiently* developed. Doubtless this omission is a mere oversight on the part of the author, but it suggests that few photographers could give clear verbal or written instruction as to when a negative is ready for transferrence to the hypo bath. Some photographers seem to have the knack of stopping development at the right moment; more, perhaps, take comfort in thinking of the corrective value of reduction or intensification. At present we are still in the fashion of a matt-printing which is too often held to allow a considerable latitude for deficiency of negative quality. It has been well said, however, in regard to the question of the best negative for any special process of printing, that a negative which has all the gradation possible is a satisfactory one, not merely for one special process, but for *any* process. Whatever may be personal preferences, or whatever the fashion of the hour, a negative correct in density should be worth aiming for.

Probably more people are vague on this matter than is usually supposed. We have, many of us; some favorite brand of plate, and not a few of us are ready—after due experience—to condemn some plates of

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which we are not enamored. Not a small factor in the failure of some new brand is probably the fact that its relative densities, before and after fixing are different to those of the brand in use. Films, again, will deceive those whose experience is limited to plates.

There are several factors which may usefully be considered in arriving at density. Mr. Watkins' well-known method of giving a time development based upon the length of time the plate remains in the developer before the image begins to appear will probably increase in favor, and is calculated to produce good technical results. It will not, perhaps, make as much headway among the fraternity as with "our friend the amateur." The regular use and constant temperature of developers, is a considerable factor. Old developers, diluted developers, and other aids and dodges are no doubt useful in their places, but more straight work and less tinkering will often yield the better result. Given a reliable plate—which means sticking to one brand for one class of work—and a constant developer and half the vagaries of negative-making are scotched. Whatever may be said of the Watkins method it is a fact that photographers judge density by the eye rather than by time. Some, indeed—but these are mostly amateurs—learn quite a bad habit of frequently lifting a plate from the developer for examination. Examination against the light is the practical way, but a constant intensity of light is necessary to uniformity of result. In my own use I have a cluster of four electric lights (my ruby glass is beyond suspicion and so I can venture a reasonable light.) Either electric or gaslight is more constant than other forms. Daylight, of course, varies very considerably. An oil lamp, if kept well and evenly trimmed and filled, gives a fairly even light if carefully regulated. If an inconstant light be used density can be best judged if there is plenty of light —always premising that it is *safe*. With a constant light it is next essential to choose a constant distance from it at which to judge the negative. In my dark-room my wrist rests on the corner of a small shelf projecting slightly beyond the lamp, and so my hands, holding the negative, always fall in the same position. With constant factors as outlined here, the element of chance in negative-making is reduced to small proportions. There is a final factor which is too often overlooked —the fixing bath. It is not recognized as it should be that the strength of the hypo solution may seriously affect the density of a correctly developed negative. Hypo is cheap, and it is a true economy to keep a freshly-mixed hypo bath rather than to use the old discolored stock. At present in many dark-rooms a haphazard chance governs many of the factors. And yet, excepting only the difficult question of temperature, none of the factors requires more than a reasonable amount of care to eliminate their elements of chance.

ON READING CHARACTER.

THE faculty of reading character is one possessed by few, yet it is an acquisition which a man of business should regard as of the highest importance. With some men the reading of character from an examination of the face, manner, or action is almost an instinct, but the majority only judge the man before them negatively by preliminary distrust which is only removed in proportion to the success of the person judged in being able to create a good impression. It is very rare that the average man can think a woman wicked who speaks with a pretty mouth and looks with beautiful, smiling eyes, and to an equal degree can a base and unprincipled man win the confidence of the unwary by a smiling face, suave manner, and insinuating conversation. Even those who frequently boast that they are good judges of character and cannot easily be "taken in" are often the most easily misled, because their pretensions rest on no very deep or sure foundation. They only read external appearances and judge the wearer of a shiny top hat, irreproachable frock-coat, faultless linen, and a neatly shaven face to be the acme of respectability, especially if these

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adornments are backed up by a ready tongue. We are too apt to look for what the advertisements call "a good address," and having this accomplishment pre-eminently before us, we quite forget to penetrate below the surface to discover the real defects of a man's character. In choosing an employé we too often judge his honesty by his face, and thereby give our confidence to a thief or to one full of every vice. Many an employer has found out to his bitter cost when too late that his judgment has erred in choosing a man for a position of trust, and in nine cases out of ten the employer would probably admit that he was "taken" with the man's face or appearance, and neglected to make full and careful inquiry into the man's character.

The old axiom that one can easily be deceived by appearances is very true in the matter of reading personal character. We are too ready to associate certain appearances with certain traits of character. Extreme ugliness is generally considered to be a sign of a not very estimable character, yet it is nevertheless true that one may be as ugly as Socrates and as good as he; whilst a man may be contemptible and perfidious with the face of Byron. So it is in the case of a hundred and one of the usual criteria for judging a man's character.

The fact is that the real secret of reading character is in the ability to observe well and to read expression rather than anatomy. Emotions, feelings, and actions reveal character in the most open fashion if only we can read them, and they leave on the face a permanent imprint which can never be masked. An authority on the study of physiognomy gives it as his opinion that it is almost impossible that a man above thirty years should bear no signs on his face which allow us to read some pages of his life, revealing one of his virtues or one of his moral sores.

An observing mind can be sharpened by exercise like all other intellectual aptitudes, and when this is understood there is no miracle or mystery about reading character. There is no special or secret divining virtue possessed by those who profess that they only need to look at a man to know whether he be good or evil, a cheat or sincere, or who believe they can go so far as to affirm that a man is avaricious or a great spendthrift, a moral man or a gallant. It is simply the fruit of experience and sagacity.

It is not only in the selection of employés that one needs to have the gift of reading character, but in dealing with those from whom we buy or those to whom we sell. It gives us tact, the greatest of all gifts, not only in business, but in all departments of life. The successful man as organizer, manager, leader, or teacher is not the most learned or talented person, but the most tactful—the one who knows how to harmonize conflicting elements, understands the nature and disposition of people with whom he has to deal, and is careful not only to avoid hurting the feelings of others, but knows how to draw out their better qualities.

Those who use their ability for reading character as a means of securing a base advantage over those with whom they are dealing prostitute a noble gift, and sooner or later descend to the level of the common cheat. "Avail yourself of chances, and avail yourself of circumstance, but above all avail yourself of character." That should be the principle ever before the man of business. Character is indispensable to success, and it may be added that next to being able to read the character of others it is equally important to be able to read and appreciate one's own character. The man who is most conscious of his own shortcomings will soonest amend them.

To succeed in life a capacity for understanding other people is an absolute requirement. We must pay due deference to the opinions of those we meet, appreciating their feelings, allowing them their prejudices and recognizing their rights, always showing a disposition to give and take, but unless we know how to read the character of our *vis-à-vis*, how can we tell when to give or when to take?

It is most important that every man should be able to discover the bent of mind of those with whom he comes into contact. All men are approachable one way or another, and if you know your business you know how to meet them. It is a salesman's duty to ascertain the character of his customer; he ought to be able to read his face like an open book. The

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success of the best salesmen may be attributed to the fact of their being able to read character. This faculty is intuitive with the thorough business man, but it may be acquired by all with observation and attention.—*Penrose's Process Work.*

NATURAL HISTORY PHOTOGRAPHY.

BY E. W. KONNARD.

THERE have been few more interesting developments in photography than the sudden rise of what might be called the natural history school. The term, perhaps, savors a little of juvenile text-books, but variants of the word have a prior association with photography—on somewhat controversial lines.

The work of such men as Wallihan, Shufeldt, Dugmore, Carlin, and others, has become widely and deservedly popular. The work is not new. Mr. Wallihan has for years passed unrecognized and unrewarded, though his work has never been excelled. But now the tide of recognition has turned, and this branch of work has suddenly come to the fore. There seems no reason to prevent its becoming as popular among photographers as its results are with the public. There are very many who can spare neither the time nor the expense to follow the genuine pursuit of large game or of wild game, but there is a field sufficiently extensive which is within the reach of the most limited opportunity or pocket-book. In this article I will leave altogether the more ambitious classes of work, and give a number of hints for the photographing of small animals, fishes, or insects, which may be done at home or in the garden. The special apparatus required is very slight. As in most branches of photography, high-priced lenses are serviceable, but not essential. Owing to the need for minute detail over the whole length and breadth of the animal portrayed, it is often impossible to use a very rapid lens at its extreme aperture. From $f/7$ to $f/9$ is a surer working speed than $f/5.6$ or $f/6.3$; and this in spite of the facts that we must have a sufficient exposure, and that our "sitters" are, many of them, incarnations of perpetual motion. Given a lens and a shutter—the chief requirement of which is that it shall be noiseless—and the only other essential special fitting of the camera is a double baseboard, hinged at the front so that the camera may be tilted to any extent. A couple of stays, such as are used to regulate a swingback, will keep the camera pointing at any angle. The need for levels is non-existent in much natural history work. We usually see small animals, at least those that live on the ground, from a comparatively considerable elevation, and the camera may legitimately look down upon them to a certain extent.

The men who have made a specialty of wild animals have obtained them in their natural homes, except a few now discredited workers who have given us zoo pictures, real or faked. The method I would describe is that suggested to me by Dr. Shufeldt, in which the creatures are removed to artificial environments, and there "acclimated." I am fortunate in having a small conservatory on the south side of my house. I commenced by imprisoning a bird in this, but I soon found that many birds would beat themselves out of recognition against the glass before they grew sufficiently tame to be amenable to my patience. Birds, in short, I found rather beyond the capacity of my somewhat spasmodic efforts, and I abandoned them as far as artificial environment is concerned. The only at-home work of this kind that I do is with free birds in the garden. Through long immunity my bird neighbors have grown tame, and many kinds come for the various foods which I provide. To obtain a photograph I carefully focus on a perching branch, or on a food-baited board, and control the camera from in-doors by a long tube and pneumatic bulb. This method of focusing I have found to be the only practical one, whether for birds or small animals. It is hopeless to attempt to focus on the creature itself; it must be done

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exactly on some spot where the animal will rest or where it may be coaxed.

My animal sitters are kept in a few hutches in my glass house. It may appear a little unnatural to them, and perhaps a little cruel, but the boxes are so fitted that the little creatures cannot burrow or get into any dark corner. This forces the animals to become more or less accustomed to their strange surroundings. For the photographing I have a couple of large boxes, one six feet long, the other shorter. These are both partly filled with gravel and earth, to make more or less natural surroundings for the animals. It is very necessary that there should be no semblance of cover for them. I soon learned to let in a broad strip of wood across each corner, for shy animals would bury their heads in a corner if it were possible, and for the same reason any loose stones or earth which could be burrowed under were avoided. To prevent the animals escaping I first tried a fine wire netting over each box, but it stopped a part of the all too little light, and a glass top became necessary. With various reptiles it is possible to remove the top of the case and photograph them from above, but animals must be kept severely cooped. To reach them a hole is made in one end of the box, just large enough to let the lens be passed through, and the camera is placed in position and carefully focused. One small part of the flooring of the box is raised in a little hill, and on this the animal will sooner or later rest. With preparations so far advanced there is little to do except remain in patience. The lighting is of course the natural overhead light. The exposure must often, perforce, be instantaneous. The animals that can be expected to give a time rest are few. The best light is a diffused light. With bright sunlight it is not easy to get the fine texture of the fur of many small animals. The box may in some cases be placed in the shade of a tree, but a better light is got by using a light screen some distance above the box. If sunlight is difficult with some animals, it is impossible with some reptiles, whose bright or wet scales will reflect little patches of clear light. An underexposed negative is useless, and there will probably be many of them, or of negatives showing movement. It is difficult to know before development whether an exposure has proved successful. Most unnoticed movements are only too frequently revealed under the developer, not only movements of the body or limb, but also movements due to breathing. For climbing animals, including such occasional climbers as chipmunks, dormice, etc., I have an upright cage in my glass house, fitted with branches.

Leaving reptile work, which is broadly the same as animal work, we come to fish. Here a tank is necessary to temporarily hold the fish. This is a homemade affair. Two pieces of clear, colorless glass are chosen for the sides of the tank. This glass should be the thinnest kind of plate-glass—common glass will prove a real handicap. The tank should be a temporary homemade one rather than a solidly constructed one, to allow for adjustment to various sizes and of easy cleaning of the glass. The two sheets of glass are placed together with a piece of inflatable rubber tubing laid tank shape between them. The inner tubes of a bicycle tire forms my tank. This is inflated, forcing the glasses apart, while a couple of screw-clamps at each end and at bottom of the tank hold them together. If a thin strip of wood is placed between each glass and the tire, a water-tight tank will be the result. The value of a tank of this kind is that it always keeps the fish in one place, at right angles to the lens, and as it can be narrowed to give the fish bare room to turn round, or not even that, the fish will remain side on to the camera.

One of the most successful fish pictures I have seen was a nine seconds' exposure of a fish in a common and not very well-lighted aquarium. But such cases of suspended animation are rare. As a usual thing, a bulb exposure, press and release, will be as long as the subject will allow, and exposure should be in the brightest possible light short of direct sunlight. All side views of fish are, to a certain extent, unnatural. When we see them in their streams we, of course, see them from above, and there are some fish which should be photographed in this way. Such fish as bullheads, and some kinds of flatfish, probably spend their lives prone on sand or mud. To be strictly correct, these

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mud-haunting fishes cannot be seen in their natural holes. In photographing them they may be placed in very shallow water, and photographed from a diagonal viewpoint. It would be difficult to photograph them from directly above; water gives too much reflection.

From a lay point of view insects may be divided into two camps—pretty and horrid. Some lace-winged insects present difficult problems, and the photographer who works with the brilliant butterflies must needs understand orthochromatism. But there are more good sitters among insects than among any other division of creatures, hence the above division. For the photographing of pretty butterflies might well be an adjunct to flower photography, and acceptable to those who have no love for bugs, or wasps, or crickets. Bugs are perhaps the easiest of all to pose. Many of them are nocturnal, and so sluggish in daylight. Placed carefully on a plant, on which the camera has previously been focused, they will usually hang on to the plant after a few attempts, especially if their food plant be chosen. Moths are fairly easy subjects, from the same nocturnal preferences. Butterflies may be posed by inverting this somnolent condition.

If a butterfly is shut in a dark box for some time, on the box being opened it will be found with its wings closed, as though asleep, and will only slowly open its wings preparatory to flying away. If the butterfly is shut in company with its favorite plant it will "roost" upon it, and both may be lifted from the box, and placed in focus, and a picture taken when the butterfly unfolds.

Photographing live creatures under the comparatively limited conditions here outlined is sufficiently easy to give adequate reward in the shape of negatives, to those who take it up; and sufficiently difficult, *i. e.*, patience-requiring, to debar those who have not a genuine interest in the creatures photographed. To the naturalist there is an unlimited field, and there is a wide one and a fascinating one for the man whose sole acquaintance with nature is a comprehensive, but unscientific appreciation.

PLATES IN THE TROPICS.

BY ROBERT DELLONT.

THE question of the supply of plates to districts under the equator is one of considerable interest to the American platemaker. When the thermometer hovers perilously near three figures, and the shade is humid, photography promptly joins the "fragile, perishable" class. Globe trotters who stay in modern hotels and limit their visitings to healthily situated sight-seeing places may use kodak films with comparative immunity, in blissful ignorance of many necessary precautions which dwellers in less favored spots have learned through a bitter experience.

All plates, and particularly rapid plates, have a tendency to deteriorate. A prime necessity, therefore, is that they be fresh. But even if the plates are quite newly coated when despatched from England, we may not receive them for eight or ten weeks, so that before we use the first plate of a batch it may be nearing three months old; and before the batch is worked through there is no telling how old the plates may be. I do not know anyone in the East who gets a very frequent consignment of plates. Most of us obtain them at second hand from some dealer, and so are further dependent on good fortune. We can only tell the value of our plates by actual test in the camera. Plates, especially rapid ones, have an unfortunate knack of going all at once. They may exist for weeks without appreciable deterioration, and then owing to some sudden change in the weather, or perhaps from no perceptible cause, a whole batch will go wrong, and persist in yielding nothing more tangible than fog. The plates of the East are European—English. They come to us through that stewpan the Red Sea, and sweltered under the equator around Sing-

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apore. It seems as though geography discriminates against Europe in this matter. A run across the Pacific ought to be the course of all plates which reach the east coast of Asia; and as soon as the trade is understood Pacific borne plates ought to double Singapore and invade India.

All plates shipped to the East should be packed, from the most recently coated stock, in zinc or tin lined and sealed cases. Probably plates of the future will be thoroughly desiccated before packing. It seems quite possible that some plates may suffer from being packed in damp or humid weather; the theory that plate boxes may hold a certain amount of moisture will account for the rapid deterioration of some plates. I have known them useless within a few days of their arrival.

It is well known that very rapid plates are not so reliable as slower ones; I notice that in America rapid plates are boomed, and think a manufacturer would be well advised to confine his recommendations to slower plates in the humid East. Frilling is not uncommon with some plates; and one brand of American plates which I have tried proved useless owing to its liability to this fault. No doubt American makers will be able to help us over these difficulties.

Confidence is a strong factor in this trade. A number of indents go to the Pacific coast which used to go to London. I have heard the London shippers much grumbled at, and I have known men who indent every order to a fresh firm in their search for what they consider an honest man. When the first indents began to be deflected toward California there were some disastrous results. Deliquescent salts were sent packed in simple paper cartoons, and arrived soaked through the cases. The result was much dissatisfaction and orders back again to England. The consumer will give his trade wherever he feels confidence; and it is up to America to see what she can do about it.

PUBLICITY.

If you have anything to dispose of the only way to do it is to let people know about it. If you deal in a certain commodity it is highly necessary that everyone should know it, so that when they are in need of the goods you have for sale they will be prompted to think of you. This plan of notifying the public that you want to sell them certain goods is called advertising, and a great deal has been written about it, both in a general way and as applied to photographers.

But the methods that are used by commercial concerns and patent medicines are not at all applicable to the professions. It is considered extremely unprofessional for a lawyer or a minister to advertise himself, and a doctor who does so is liable to be given the name of "quack." A photographer may advertise himself to such an extent that when the average customer wants his or her picture made they first think of a certain attractive advertisement, and go to that place for work.

But the secret of success for every professional occupation is not so much constant advertising as it is publicity. A photographer gets more business through his reputation than he does through an advertisement; at least, more steady and lasting business. Therefore, it is the fact that a man's work is in demand because it is known to be good, not because he advertises it to be so.

That condition of affairs which will contribute most largely to a photographer's success is publicity; in plain words, when the attention of the public is forcibly called to the fact that you are doing work that is unusually good, and that the subject of pictures can hardly be touched upon without mentioning you and them favorably. It is not sufficient alone to have a good reputation, although that is the first step, but it is necessary that as many people as possible shall *know* that you have a good reputation. This is publicity.

There are numbers of ways to get this, and each may have his own ideas as to how it can be done most efficaciously, but in order to stimulate some original thought along these lines we venture to suggest a

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few of the methods that have been used successfully:

By putting in the street case an occasional novelty or a striking effect that will attract attention and cause talk.

By using a good customer, who is influential in the community, for experimenting a new lighting or pose, and then, if she is pleased with the results, give her enough of the pictures to win her good opinion.

By trying and exhibiting new kinds of prints, cards, and the many "tricks" that are exploited in the various magazines and which may not sell, but which will make people notice you.

By having pictures of public people exhibited or printed or shown in any way, that the attention of the public may be called to the enterprise or ability of the photographer.

And the best way of all: By sending an exhibit to a convention, letting the public know that you have sent it and gone with it, and if you take a prize also let that be known far and wide. It is not the best policy to do the talking yourself, but see that others do it. If you can do anything extra well, let it be given publicity, for that is the thing that brings the business, and that is what we are all looking for.

There is absolutely no better kind of publicity for a photographer than to have it well noised about that he has made an exhibit at a convention, and has been adjudged by his confrères to have made work that was worthy of a prize and honorable mention.

The public will naturally conclude that the judges were competent to criticise a picture, and their opinion is worth consideration by the public. There is no form of publicity more professional or more valuable, and the photographer who declines to take advantage of an opportunity to gain it is standing in his own light and putting impediments in the way of his own success.—*Trade News.*

BACKGROUND STANDS.

UNDOUBTEDLY, to my mind, it is in the greater number of cases cheaper to buy a background stand than to make one. Cheaper, that is, considering the excellence of the supports at present on the market. Apart from the fact, however, that some of the best of our workers prefer the simplest of stands rather than the more elaborate ones which the supply houses offer, there are many men who have a summer gallery which is only open for a short season, who wish some temporary support for their scenery which shall be light to move during working hours and easy to stow away or discard when the season closes. For those who roll their backgrounds there is nothing cheaper or more serviceable, within the limitations, than a pair of brackets projecting from the wall of the studio, with slots cut in them for the roller to work in. If several backgrounds are held in this rack it should slope upward from the wall toward the light, or the background nearest the wall may, when in use, have a shadow cast across it from the overhanging ones nearer the camera. A simple cord and pulley, such as were used before native genius gave us spring shade-rollers, will raise or lower the grounds as required. Such a simple arrangement is satisfactory in the studio of moderate dimensions and moderate work, where one relative position of camera and sitter is maintained.

A light, movable stand is, however, better in many respects, and particularly in that it can be placed at any angle to the light, a point of no little importance and value when dealing with any backgrounds other than distinctly scenic. The old-line ground which displayed a reach of landscape or some elaborate building or interior, was not calculated for the distortion of perspective incident to a side view, but this limitation does not affect many of the modern backgrounds, and so greatly enhances their value. For one plain ground capably handled as regards direction and intensity of light has the latitude of several grounds of different shades, provided the latter are merely used at right angles to the axis of the camera lens

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—as is usually the case. A rack such as already described may be fastened to a frame on casters instead of to the wall. Four or even six backgrounds may be thus hung together, provided the frame has heavy feet, which should not be less than two feet long, and preferably thirty inches. Such a frame should bear two or three backgrounds on each side of it to balance it, and be turned around when required.

Where space is no consideration, or where there is a tidy knack of utilizing it, there is no better method than the one of keeping backgrounds permanently mounted on stretchers. There is only one drawback to this method and that is the possibility that through careless handling some hard corner may be thrust through the taut-drawn canvas. Even this may be largely avoided—in studios where carelessness is recognized—by precautions taken in the preparation of the stretcher. Before the background is mounted, cover the stretcher with a sheet of calico, and on this paste two or three thicknesses of brown paper. Do not do it all at once, but let each layer dry before the next is added. This preparation will become in effect a sheet of tough card-board and will save the background in the event of a hard knock. It will, however, in the making, prove a severe strain on the stretcher, and will warp it out of all usefulness unless it be very rigid, or be stiffened on both sides at the same time. This latter is undoubtedly the best way to prepare them, making each stretcher to take two grounds, one on each side, and so halving their number. A number of backgrounds—two to a stretcher—do not take an inordinate amount of room even when the stretcher is mounted on feet. These feet need not be more than twelve inches long and each fitted with a couple of good working casters. By dovetailing the feet in and out when the grounds are stored, each pair will not project more than eight or nine inches from the next one.

Better perhaps than a number of lightly-footed stretchers is to have one frame on which the required background can be hung. A pair of hooks on the frame, and a pair of eyes in the edge of the stretcher would make placing in position the work of a moment. With such a frame the backgrounds would occupy an inconsiderable space against the wall. A pit in the studio floor in such a position that it comes against the wall of one of the rooms below, is an excellent device for storing spare grounds. When backgrounds are thus kept face to face it is well to have along their upper and lower edges a narrow strip of thin wood to keep the canvases from rubbing. This is not likely to happen when they are put away—they will probably be slid in grooves, but may occur when they are in prospective use and temporarily leaned against the side of the studio.

The drawback to loose stretchers—as against those mounted on feet—is that they cannot well be handled by one man alone. A pair of light handles should be attached to opposite sides of the stretchers to facilitate their moving.

STAINS.

BY FREDERICK GRAVES.

One of the things that often troubles the photographer is stain. Stained negatives, on the other hand, seem by some workers to be just as much desired as they are by others dreaded. Pyrogallic acid developers, which are so prone to give more or less stain, are avoided, therefore, for this very drawback, though there are workers who will not on any account give up their use because of the printing values produced thereby.

So there is a good deal of difference of opinion as to whether the yellow-stained negative has advantages over the clean black and white one.

Naturally the yellow negative takes a longer time to print, but there are the concomitant objections generally also to stained fingers and dishes, etc.

A pyro developer when in the presence of an alkali, as sodium carbonate, absorbs oxygen, either from the air or whatever

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compound it comes in contact with containing it, and this oxidation going on during development causes the decomposition of the pyro and the brown stain. Often enough, as in the case of a thin negative, this staining is a decided advantage, for it acts somewhat as an intensifier. This is not always the case, however, and sometimes the result is very hard and unpleasing, and it is desirable to get rid of the color.

This may be achieved by various means; one of the simplest is by immersion of the stained negatives in hydrochloric acid, and another fixing in fresh hypo, allowing, if necessary, a considerable length of time in the hypo bath,

Anyone who has used a pyro developer for a long time may find, on taking up hydroquinone or metol, or some of the other newer developers, that it is necessary with these latter to develop much further in order to produce sufficient density for the loss of the yellow stain, which, in the one case, gave to the negative an equivalent for density, and has to be allowed for.

This yellow stain, if desired specially in a negative, but not present, may easily be got by giving the finished negative a bath in an old quantity of pyro developer, though probably a better plan would be to immerse it in a solution of permanganate of potash. The deep purple color of the permanganate solution will soon give the gelatine film a deep brownish tinge, which if carefully applied, and not allowed to go too far or to stain too unevenly, will act as a striking intensifier to thin, weak negatives. When, however, a negative is unduly harsh and dense already in the high lights, this will not be a good form of treatment, for although the thin parts may become greatly strengthened, the whole will be so equally acted upon that the results can never be satisfactory; in such a case, the high lights must be reduced by a selective reducer such as persulphate of ammonium, and then, if desired, the film may be stained with benefit.

In clearing away the stain of dense or uneven negatives, the use of an acid alum bath is very useful, such as

Hydrochloric acid	1 oz.
Alum (saturated solution) . . .	20 ozs.

The negative after fixing is well washed for a few minutes under a tap, and then placed in the clearing solution until judged to be free of stain, when it must be thoroughly washed and dried.

In the case of silver stains, often a prolonged immersion in old hypo (strong) will work wonders.

Another plan is to moisten a plug of cotton-wool with a weak solution of cyanide of potash, and rub the stains well, and then to thoroughly wash. A bath of iodine and potash iodide is very useful, too, as: iodine, 4 grs.; potassium iodide, 20 grs.; and water, ½ oz. Add to this a few drops of strong hypo solution until the red color goes, and apply to the stain with wool, gently rubbing.

Another good formula for pyro stains and yellow color is—

Sulphate of iron	4 ozs.
Sulphuric acid	1 oz.
Alum	1 oz.
Water	20 ozs.

First wash thoroughly to remove hypo, immerse till clear, then wash and dry, or sulphate of iron and citric acid and alum may be used for the same purpose.

The older the stain is the more difficult it will generally be found, I think, to successfully get quite rid of it.—*Photo. News.*

STREET PHOTOGRAPHY.*

BY JOHN BARTLETT.

SOME of the French and German painters and some of our own painters have shown in their pictures of the city streets the beautiful effect of line and color. There is Jean Beraud's picture of Place de Concorde. One needs not to wait to identify the scene; unmistakably the picture is Parisian, a bright little transcript from the life of the streets. It is the hour of setting

* A paper read before the Photographic Society of Philadelphia.

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out to work. A lawyer with his brief-case under his arm has stopped to converse with a friend; their chat is broken off, while each looks toward a trim and dainty figure. She is a model in a Magazine des Modes. Her fine shape and pretty face set off to full advantage the cloaks and hats she puts on to display. In the distance we see the Chambre des Deputes. Everything is as realistic as every-day Paris life can make it.

Then there is Grandjean's Roadway in the Bois de Boulogne; then we have the market scene by Pasini and road scenes in active city life by Gerome.

I must now call to mind a very familiar picture (the artist's name I forget) of Madison Square and Broadway Crossing. This place, as everyone knows, is the busiest spot of a busy town, and though we have passed and repassed many a time in the day, it probably never occurred to us that the prosaic and intensely practical looking sky-scrapers, the tangled mass of horses, drays, carriages, and the motley crowd of people, would give us, when almost literally transcribed to the canvas, pleasurable sensation and positive artistic delight, increased no doubt by the novelty of the presentation.

After the painter had opened our eyes by the revelation, we have frequently seen the same place under similar beautiful aspects; though we have often been looked at rather curiously, nay, even compassionately, by the prosaic matter-of-fact policeman, who no doubt thought "there's a hayseed from away back, smitten with awe at the bustle of Gotham."

And in our own city, dear old Philadelphia, we have, since our eyes were opened, been equally delighted with our peculiar picturesque street-views of city life.

A street which crosses the rectangular streets diagonally affords excellent opportunity for pictorial representation. A point of view thus chosen adds to the effect, as it gives the idea (we cannot explain how) of motion in the picture, making the general trend of the street an oblique line across the view.

If the lines of the street are taken so as to give the view of the curbing parallel, the effect of life and animation is all destroyed, and you have only an instantaneous, petrified view of a street with arrested motion, as if some head of Medusa had turned the people into stone.

This is the character of nine-tenths of street snap-shot views. The foreground of a street picture is apt to be very complex, full of shifting masses of people and moving vehicles; but if properly chosen, this complexity adds further to the means of suggesting motion. A rainy day offers peculiar advantages for artistic effect, the reflections from the flag-pavements giving especial interest. Night scenes in the streets are also possible with a modern non-halation, double coated or backed plate, and they are often beautiful when the shadows and high lights are harmoniously blended, but with street scenes at night the complexity of the source of illumination requires great judgment to secure proper shadows and to give coherence to the various elements.

There is, however, an effect of loneliness in night scenes of city life which is suggestive, almost poetic in sentiment.

Though somewhat foreign to the topic, I cannot help suggesting the pictorial value of public gatherings, the crowds at railway stations, race courses, modern field sports—such subjects are worthy of a more artistic treatment than they get from the average snap-shotter. It is really surprising that athletic sports, such as cricket, tennis, etc., should not inspire the artistic photographer.

We are quite aware of a legion of photographic views of polo, golf, etc., but they are taken with the express purpose of showing the skill of the players, not the beauty or grace of action, and sometimes the most violent contortions of body and distortion of face are applauded because they depict a good hit of a celebrated player.

The vigorous action of the men and women, displaying the forms of the limbs, the elegance of female drapery in action, the pleasing scenery in which such sports frequently take place supplying a landscape setting, ought surely to tempt the artists in photography, and I am sure they would carry the public with them. We do not mean that cricket matches, foot-ball games, etc., are not photographed, but then most of them merely prove that so-and-so's shutter is capable of taking moving objects

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in less than one-thousandth of a second, and do not show the rich material for artistic manipulation.

The English painter Frith worked in this direction very effectively in his "Derby Day" and other works.

MOUNTING AND FRAMING PHOTOGRAPHS.*

In the early days of photography very little attention was paid to the subject of mounting and framing, and nearly all pictures had three features in common: (1) The frame was either of gilt or of narrow, light-colored oak, frequently of the objectionable pattern dubbed "Oxford;" (2) the sky was nearly always represented by white paper; (3) the print was pasted on white card, and was frequently embellished with ornamental borders, preferably in colored ink, and of wonderful design. Nowadays, photographers are beginning to realize that the setting is almost as important as the picture itself, and have given it a fair sphere of consideration. Although really a matter of individual taste, there are round principles underlying the matter of mounting and framing which may be now stated. The setting has three functions to perform: (1) To support and protect the picture; (2) to isolate the picture from conflicting surroundings; (3) by harmonizing with the subject to emphasize its good features and minimize its defects. With regard to the size of the mount, it is a rule that large and decided pictures should be framed close up, and small, delicate ones should be surrounded by a suitable margin of card-board. The chief points to be considered in choosing a mount should be (1) size and proportion, (2) texture, (3) color.

1. Size and Shape. The proportions of length and breadth of the mount, frame, and picture should rarely be the same, because the eye either follows the diagonal lines inward, and is carried toward the centre, where, as a rule, a photo is weakest, or is led outward toward the mitres of the frame. The margins also of the mounts should not be of the same width at the sides as at the bottom and top. In some cases the width at the sides should be the greater, and in other instances less. [Examples were shown illustrating both methods, and they seemed to suggest that where the print is somewhat square, and where vertical lines prevail and require to be emphasized, the margin at the sides should be less than at the top and bottom; but where a sense of horizontal expanse is to be conveyed it should be *vice versa*. In order to impress the effect on the subject produced by varying widths of margin there were numerous examples exhibited for comparison, and comments made on each; also exhibits showing the dwarfing of a picture by a mount which is too large for it.]

2. Texture. The fineness or coarseness of the surface of the mount has a marked effect. Rough mounts scatter more light, and therefore look lighter generally than smooth ones do; the rougher the grain the more important it is that it should not be viewed in oblique light; if a rough print be placed upon a smooth mount the roughness is emphasized, and, *vice versa*, a brilliant photo is increased in brilliancy by contact with a rough mount.

3. Color. Great difficulty exists in the selection of a proper color for a mount, tone—*i. e.*, darkness or lightness—and tint (color proper), both having an influence. A perfectly even wash of color appears graduated when in contact with a lighter wash on one side and a darker on the other, that portion nearest to the lighter shade appearing darkest by contrast. In the same way, a dark picture on a white mount looks darker, and a white print on a dark mount appears whiter. Summarizing, we may say (1) that all glass degrades or weakens in tone both the picture and the mount; (2) quite white and quite black mounts should seldom be employed; (3) pictures in which the greater part is decidedly light are best set off by mounts which tend toward light rather than dark; (4) similarly, dark pictures should be supported by mounts which belong in tone to the darker end of the scale; (5) pictures

* A paper read before the South Australian Photographic Society by A. H. Kingsborough.

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which contain a fairly even balance of light and dark admit of great liberty in treatment, according to what is considered weak or strong points in the print. In dealing with color proper, the color of the mount must either harmonize with that of the photo or it must agreeably contrast. Harmony of color was easy to arrive at, but contrast must be dealt with along the lines of "complementary" colors. The composition of white light was brought under notice, a specimen was thrown on the screen, and then methods of combining again the colors into white light were exhibited; the "persistence of impressions" on the eye was given as the cause of the blending in the case of rotating colored sectors. The fact that white light can be produced by a mixture of two colors only, which are complementary, was duly emphasized, and several instances were quoted; its application to the mounting of photos was clearly demonstrated, and the effect of a yellow mount surrounding a white centre was seen to give the white a bluish tinge, while a blue mount imparted a yellow tinge to the central white patch; in other words, the latter appears to be tinged with a color complementary to that of the mount. The practical upshot is that a color must be chosen for the mount which will be complementary to that required to be seen in the print, and it must be remembered that complementary colors furnish the strongest possible contrast. Lines, borders, cut-out mounts and their edges were referred to, and the lately-introduced idea of placing around the print a series of cut-out tinted papers, each with the opening a little larger than the other, so as to produce a stepped blending of tints, either darker or lighter, toward the outside edge of the mount. In respect to framing, the remarks made with regard to mounting applied, and flat or deeply-moulded frames should be chosen with due regard to the peculiarity of the picture to be emphasized.

MORE ABOUT ACETONE AS A DEVELOPER.

BY JEX BARDWELL.

In my time, "away back," I took an English journal, *The Photographic News*, and in one of the numbers I noticed a formula for making the double salt of iron and ammonia. The author stated that he believed it would take the place of the sulphate of iron, then in use for developing wet collodion plates, and gave his reasons for so thinking. They were that it would give better density, stand longer developing, and with a suitable collodion would give a negative that would require no intensification—an important consideration in those days. This photographic agent was not to be bought, so I had to make it, and found it all as promised. I then made up quite a quantity, passed it around in samples, and I had more calls for it than I could supply. Mr. Ayres, of E. & H. Anthony, who was on the road for them, called on me. He said that Mr. H. T. Anthony had heard of the new helper, and had sent to France for a sample. I gave him some of my make to send to Mr. Anthony, but I never heard from it. However, it was soon afterward placed on sale.

I have in my collection negatives made in 1858, collodion dry plates, meta-gelatine, collodion-albumen, and tannin. When I opened a gallery in Detroit, in 1861, I used the collodion dry plate for all my stereoscopic work, but there was considerable uncertainty in the results. I read in the above mentioned journal the recommendation of coffee as an organifier and preservative, tried it, and found that by its use I cold prepare overnight a dozen plates, and from them obtain twelve good negatives. I dropped all other processes, and used coffee until the advent of the gelatine dry plate. I was very successful in its application, published my method of preparing the plates, and had the honor of having my remarks republished in English journals.

Again reading in a foreign journal that acetone was found to take the place of the

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sodium and potassium carbonates, I at once became interested. I had trouble in obtaining it, but at last I obtained half a pound from New York, and followed the formula. I found it so promising that, after giving it a good and satisfactory trial, I published my finding. Judging by the quantity of acetone now sold, it must have found favor. So far, I believe, I am the only one in America to publish and advocate its use. On what ground? It is extremely simple in its application. It is stainless. It hardens the film. It will "work soft" or "hard." It gives perfect gradation of tone, and there is a desirable absence of chemical fog. It works equally well with plates, films, lantern slides, or papers. In fact, it will work as well in every respect as the carbonate of soda or potash, and in some things it is better. Remember, while thus advocating the use of acetone, I do not recommend the professional worker who has the task of developing large numbers of negatives, to lay aside his own formula that he is familiar with. But for the landscape worker, the amateur, who is willing to work over a single negative at a time, and who may desire to obtain all there is in it—to such I say try it. I have had some experienee in negative-making, and have had better satisfaction in using acetone than with the carbonates.

I confess to a certain pride in the advent of the double salt of iron and ammonia, and recommend its use in place of the sulphate of iron used by some of the collodion workers of the present day; also to my advocacy of the coffee-collodion dry plate, as it is still the best medium for microscopic negative work.

As I have made a modification in my acetone formula, I send with this a copy, also a couple of velox prints developed with the acetone M. Q. developer.

[These fully sustain Mr. Bardwell's claims, having desirable vigor and brilliancy, combined with detail and softness of gradation—EDITOR W. P. M.]

Formulæ for Plates or Films.

No. 1.

Water	20 oz.
Meta-bi-Sulphite of Potassium	40 gr.
Pyro	1.0 gr.

No. 2.

Water	6 oz.
Sulphite of Soda (Seeds)	½ oz.
Dissolve and add	
Acetone	2 oz.

For normal use, take of

No. 1	1 oz.
No. 2	2 oz.

For soft effects, add

Water	1 oz.

For density, mix

No. 1	2 oz.
No. 2	1 oz.

For carbon velox, take of

No. 2	1 oz.
No. 3	1 oz.

For special portrait velox, add

Water	1 oz.

No. 3.

Water	10 oz.
Metol	7 gr.
Sulphite of Soda	½ oz.
Hydroquinone	30 gr.
10 per cent. Sol. Bro. of Potassium	1 drachm

Fixing.

Water	2 oz.
Citric Acid	2 drachms
Dissolve.	
Water	3 oz.
Sulphite of Soda	4 drachms
Dissolve and add to above and add to Hypo Solution.	
Water	15 oz.
Hypo	5 oz.
Dissolve, and add the citric and sulphuric solution.	

To reduce or to clear negatives, I recommend the following. It does *not stain*, and can be used over and over again.

Water	4 oz.
Cerium Sulphate	137 gr.
Sulphuric Acid	1 drachm
This will keep.	

For clearing up and reducing, add an equal quantity of water, and save in a separate bottle for future use.

In what direction should a sitter's eyes be turned? Almost invariably the sitter is asked to look straight in front—not necessarily toward the camera, but in the direction of the nose. Painters more often turn the eyes toward the spectator, when the face is turned partly away. This is possible in photography, but should be sparingly resorted to.

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THE OHIO AND MICHIGAN CONVENTION.

THE photographers of Ohio and Michi- will meet this year at Cleveland, August 27, 28, and 29. An attractive programme is prepared, and we hope that every one of our readers in these two progressive States will attend the meeting. The officers of the association are: C. S. Bateham, Norwalk, O., president; A. L. Bowersox, Dayton, O., vice-president for Ohio; J. F. Rentschler, Ann Arbor, Mich., vice-president for Michigan; F. S. Clark, Detroit, Mich., secretary; W. L. Smith, St. Mary's, O., treasurer.

Classification of Exhibits. Special cash prize class, open to the world, $150.00 in gold. $75.00 first prize. $50.00 second prize. $25.00 third prize.

Exhibits must consist of three framed photographs, measuring thirteen inches or larger.

Any photographer whose dues are paid may compete in this class.

Those outside of our States must pay dues of $2.00, thereby becoming associate members.

General Exhibit. For Ohio-Michigan active members. This exhibit is for study and comparison, it being expected that every member is interested in the welfare of the association and will send some of his productions, thus securing the benefits which can only be obtained by comparison of his own work with that of others.

The Salon. (Started in the Ohio Association in 1895.)

All pictures by active members are eligible for salon honors. They are selected for artistic qualities,and each member having one or more selected will receive a *Certificate of Honor* signed by art judges, testifying to artistic excellence.

Interstate Exhibit. This travelling exhibit is made up of pictures from each State association, each association being represented by one picture which has been selected as being the best exhibited at their last convention.

Rules. 1. Pictures for general exhibits may be framed or unframed at the discretion of exhibitor, and may be any size.

2. A hanging committee will superintend the hanging of pictures, and if members have sent more than are desirable they will select the ones with greatest merit. This will make the acceptance and hanging of work a honor in itself.

3. In the general exhibits the artist's name may appear or not as desired, but should be placed on the back of each picture for identification and proper return.

4. In the Cash Prize class no name should appear on the pictures.

5. Association will not be responsible for any loss or damage to pictures in its charge, but the best of care will be taken by the Executive Committee to ensure the safe return of all exhibits entrusted to its care.

6. Fasten box covers with screws, not nails, and see that your home address is on the under side of cover.

7. All packages containing pictures for the Art Department must be prepaid and addressed to A. L. Bowersox, vice-president Ohio-Michigan P. A., Grays Armory, Cleveland, Ohio.

8. All exhibits must be on hand not later than Monday morning, August 25th. This is imperative, to allow sufficient time for proper hanging.

9. Make application for space in the Art Department to A. L. Bowersox, Dayton, Ohio.

FRANK S. CLARK,
DETROIT, MICH. Secretary.

A PLAIN white or tinted mount with a single lead-pencil line ruled around the print is sometimes more effective than any more elaborate creation, especially if the print is something light and sketchy. A ruler is all the necessary guide for a square or oblong line, and compasses will give a circle. Ovals of any proportions can be made by the simple and practical method of a bit of string and two pins. Place a couple of pins, three inches apart, upright on a card. Then take ten inches of string, tie the ends together and place the string over the pins. Run the point of a pencil inside the string, keeping the string taut, and the resulting line will be an ellipse with a pin in each focus. By varying the distance of the pins any ellipse may be obtained.

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PORTRAIT

By C. A. Krausch, Pasadena, California

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PORTRAIT

By C. A. Krausch, Pasadena, California

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PORTRAIT

By C. A. Krausch, Pasadena, California

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THE SISTERS

By C. A. Krausch, Pasadena, California

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PORTRAITS

By C. A. Krausch, Pasadena, California

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HOME PORTRAIT

By Wilh. Weimer, Darmstadt

From "Photographische Mitteilungen"

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MOTHER AND CHILD

By A. W. Goodman, Belvedere, Kent, England

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MADAME VIGÉE ET SA FILLE (Louvre)

Le Brun

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ADVERTISING.

"For the Good of the Order."

BY W. I. SCANDLIN.

It seems to the writer almost an unfair thing for an advertising man to write about advertising and expect to see his MSS. published as reading matter in the regular columns of a magazine supported by the craft he hopes to serve, and yet, when viewed in another light, it assumes a widely different aspect, for if his premise is correct, the reader benefits by the views expressed.

If the advertising man, who is or should be familiar with his subject, does not write about advertising, who may be expected to do it? We certainly do not expect the village blacksmith to write as instructively on the subject of piano playing, for instance, as upon some theme connected with his own business, and therefore, on this basis, the present article is presented with the purpose of considering the necessity and some of the many advantages to be derived from a judicious system of publicity for the progressive photographer of to-day.

In this connection it is interesting to note the different meanings that seem, popularly, to attach to the word "advertise." In the minds of some it appears to mean simply a card in the daily or weekly newspaper — unchanged from month to month, and profitable only to the publisher, who gets paid for the space occupied. Others seem to view it in a more indefinite way, and jump at the conclusion that to advertise means to expend a lot of money in a sort of haphazard game or lottery, some of which *may perhaps* come back, but none of which may be counted on with any degree of certainty. Both these views are based upon experience of the parties holding them, and are entirely reasonable when it is considered that the photographer has been in the habit of selecting his own mediums for publicity, and writing his own copy. As a rule, he cannot do this to good advantage, and there are several reasons why not: one is the fact that he cannot see his own business through the eyes of the people he wishes to reach—his vision is warped, and he will be apt to "talk shop" in his copy. Then, too, the furnishing of new matter for each day or week, or the planning and issuing of a new folder, leaflet, or booklet at the proper time and in the most fetching manner, soon becomes irksome, and the result is the abandonment of a plan that had perhaps just reached a point where it only needed to be continued a little longer to make its results apparent.

The photographer is more familiar with the covering power of his lens than with the convincing power of language. He knows how to stop down his lens, but often fails to realize the necessity of treating his flow of language to the same medicine.

The blacksmith may, of course, be found who knows how to play the piano with skill and effect; so, too, there may be found photographers who know how to exploit their business with skill and profit; examples are rare in either case, however, and "the exceptions prove the rule." If this is so, the question seems to narrow itself down to this form: Is any advertising necessary in my own particular business? and if so, am I strong enough to plan and execute it successfully in addition to the extra work incident to the increase of business it will bring me if successful? In other words, have I the training and skill to write bright, attractive copy that will bring people to my studio because of its power to attract and hold their attention whether they like it or not? Have I, in addition to this, a knowledge of printing and types, paper, binding, illustrating, and all the details of publishing, that will enable me to *tell an interesting story* of my business and tell it in such a way that it will be read and its salient points remembered by every person into whose hands it falls?

A simple announcement that "John Smith is prepared," etc., is not enough in these days of story-telling, attractive and often brilliant advertisement writing. The matter must appeal to the reader with a personal interest; otherwise it is useless.

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The business of the photographer is, perhaps, more than any other, a business that must be *created*, and while it exists almost everywhere as a latent possibility, it is only where the right methods of publicity are applied that it is stirred into life and activity.

The peculiar conditions of the photographer's business render it especially fitted to attractive exploitation. His illustrations may be chosen from a wide field, his matter is not confined to any description of them, and they may therefore be treated as illustrations pure and simple should be. He is at liberty to plan much or little in the preparation of his matter. Whatever he uses must be to the point, and must, above all, be neatly printed and attractive.

If his finished product is of such a character as to commend itself to the tastes of the people he desires to reach, and if it tells the story in a manner to excite and hold their interest, it is advertising well started. It must not be supposed, however, that this is the end of it all. It is in fact only the beginning, and the matter presented, whether folder, leaflet, booklet or even newspaper advertising, must be so placed as to come under the eye of those whom he desires to interest, at the best possible time and place, for their leisurely attention.

When this has been done he will begin to feel the effect upon his trade, and will find the cost of the additional output proportionately so small as to be almost a negligible quantity. Under ordinary circumstances he can almost double the amount of his output—with only the expenditure of a little thought and change in the organization of his forces, and herein lies the value of successful advertising for the photographer.

Now, if he is strong enough and talented enough, in fields outside his own domain, to do these things and do them well he will shortly find that he has created new business in his vicinity that had lain dormant for years, and that undoubtedly would have continued to lay dormant for many more years to come.

This is the history of all advertising to-day, and there never has been a time when publicity played so important a part in the development of business profits as at the present time. A careful study will show that advertising as it is now carried on is not a lottery nor a haphazard game of chance. It is a business proposition that has to be considered on a business basis, by business men of broad gauge—the men who make money—and one that, properly conducted, is a business necessity.

If then, it is a necessity, why not have it planned and executed by those who have been trained in it? Let the photographer enter into correspondence with some of the various men whose business it is, and treat them frankly as he would his lawyer or physician, and let him look for honest, intelligent service from them as he would from his stock dealer or plate maker. Let him utilize their training and facilities to develop and exploit his business, and at the end of a year let him figure up the cost of the service and compare it with his increase of profits over the preceding year. If then he does not find himself largely the gainer, he may safely resume the writing of his own copy. Until he makes the trial, however, he is likely to find little change from previous conditions, no matter how much effort he may put forth. *A few well-chosen words seasonably distributed to the right people* are the things that bring business, and these cannot be prepared to best advantage except by those who are familiar with the many details that go to produce them.

ABOUT RESIDUES.

BY G. WATMOUGH WEBSTER.

It is well over a quarter of a century since I first wrote about residues in these pages. I am about to thresh the subject out once more, being induced thereto by several conversations with practical men I have had of late. The burden of their remarks has been: "I do not think I shall bother after residues any more; now I

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have given up albumenized paper, there is nothing to be got for the trouble of getting out of print washings," and so on. And there is at the bottom of the matter a certain amount of truth; but it is one of those half-truths which we are apothegmatically told is "worse than a lie." It is not for me to become an apologist for albumenized prints, though I am far from having entirely given up their use; but there is truth in the statement that the washing waters from modern sensitized papers—gelatine and collodion—contain a far smaller proportion of silver than would be obtained from an equal quantity of albumenized paper washings. But, carefully carried out, there is quite enough recoverable to make it worth while taking steps to collect it; besides, it does seem such unscientific work to throw silver even in small amount down the sink. So far as to print washings; but when we come to discuss hypo the matter assumes quite another aspect; other, that is, than that presented by print washings, for the saving of hypo residues is to be regarded now in the same light as it was twenty years ago. Indeed, seeing the comparative failure of the print washings' source, extra attention ought to be given to the hypo question. I have at various times made many inquiries among professional friends as to whether they saved their used hypo or not, yet the reply has very many times more frequently been "no" than "yes." So much has been said both by myself and others on this point that it might seem useless to say more, but I cannot help sermonizing on the text while there are so many fixing baths to be saved. And more than once have I received extraordinary rebuffs. Once, when I was doing my best to induce a photographer to adopt the plan, I was met with the astonishing reply: "Oh, yes; I see your little game! You want to put some business in the way of a friend who sells the chemical to throw the hypo down." I assure my readers that I did not invent this story; the above reply was literally, and in real earnest, made to me. Still, I have gone on trying to "do good by stealth." I have never yet been made to "blush to find it fame" by finding so many studios with hypo collectors attached. This is how the matter works out now. Recently I took the trouble to have all the residues from the print washings and the precipitate from the hypo separately collected and sent to the refiners, with instructions to assay and reduce each lot separately. It was only a small collection; but it answered as well as a large one for the purpose in view. Formerly there used to be no great difference between the values of the two lots—chlorides and sulphides—when separately valued, so that to save trouble we eventually got in the way of sending the whole collection as one package; but when this recent batch was sent, there was about five pounds' worth hypo product to one of print washings. See what that means. Anyone getting a five-pound note ($25) for the chloride obtained from his print-washing waters would have obtained twenty-five pounds ($125) from his hypo! Surely such facts should appeal to the most indifferent; yet I was credibly informed not very long ago by one of the largest publishing photographers in London that in none of his branches was the hypo saved; it was thrown down the sink when done with—probably some hundreds of pounds per annum! This to me would have seemed incredible at one time; but it was simply an exalted demonstration of a fact which had become well known to me.

Yet I should like once more to be allowed to describe the very simple method that I and others adopt. We simply throw the silver down from the hypo in a similar manner to that adopted with print washings, the one difference being that for salt we substitute "liver of sulphur," a polysulphide of potassium. It has, of course, the one objection of giving off a highly offensive odor when its solution is poured from vessel to vessel. There is, however, this saving point about the offensiveness of the operation. The solution of sulphide very quickly decomposes when exposed to the air, giving rise in a very short time to a skin or scum that prevents further annoyance, so long as it is not disturbed. Further, the sulphuretted hydrogen given off into the air does not contaminate it for an indefinite time. It gradually decomposes and becomes undiscoverable by the sense of smell. The recovery of silver is not confined to the print-fixing hypo; that which has been used for negative fixing

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should be thrown into the same vat. Lately I collected the hypo from a branch studio from time to time into a gallon wide-mouthed glass bottle, throwing the silver down each time the bottle was full. After a few gross of negatives had passed through, I sent the result to the refiner, who extracted seven and sixpence worth of silver from the sulphides thrown down. This would represent such an imaginary amount of trouble to the average operator that he would not care to undertake it; yet, as a matter of fact, the trouble involved or time wasted was virtually *nil*.

One other consideration to again bring forward. The print-fixing bath, besides silver, always contains a certain amount of gold derived from the waste gold-toning solutions that should always be thrown in, and from the toned prints themselves. This gold accompanies the silver when the latter is precipitated, and my own experience has been that often the silver obtained from hypo contains so much gold that the refiners allow some 50 per cent. more for such silver than for that from chlorides.

A practical note may here be made. It is thought by some that the residues should be collected, reduced to metal, and redissolved to form nitrate of silver by the photographer himself. This is quite a mistake. The cost of materials, crucibles, firing and risk of loss through accident will, as a rule, average more than the amount saved by doing the reducing at home. I have for over forty years dealt with one firm for residue work, and I recently asked them to let me know the principle on which they based their charges for reducing. They replied: "Our charge for reducing residues is always based upon the burnt weight, and is one shilling per pound." From this it is obvious that true economy will, as often pointed out in this journal, consist in keeping all residues, paper clippings, filter papers, etc., as clean and free from foreign matter as possible; otherwise a charge of a shilling a pound of burnt rubbish will have to be taken off the gross cash result of residue saving.

I do not think I need write more. I would reinforce my old story by adding the moral: If you are determined to throw some silver down the sink, throw the print washings down, and save the hypo residues.—*The British Journal of Photography*.

UPON THE IMPROVEMENT OF NEGATIVES BY MASKING.

BY P. MATHY.

To secure the very best possible result from a negative it is almost always necessary to resort to some form of local treatment or dodging. Some workers do this by the application of intensifiers or chemical reducers by means of a brush; others by the employment in parts of mechanical reducers, such as Baskett's terebene and globe polish, or the older alcohol and cotton-wool method. Retouching is in great measure one of these resources, and another is to be found in the glycerine method of working platinotype. But far away ahead of these plans, in point of convenience and adaptability, comes the masking method, which may take a great deal of time in its initial application to the negative, but has the advantages that the original negative unaltered is always at hand if required, and that once done it applies to every print taken from the negative so long as the mask is in position.

M. Mathy, in the *Bulletin Belge* a short time ago, gave an account of his procedure in this direction, which we translate and abridge for the benefit of the readers of *Photography*. Let us take, for example, an interior taken against the light, with the door and window in the background. These in brilliant illumination affect the sensitive plate far more powerfully than the shadows, and if the half-tones are not to be lost, recourse must be had to local treatment. The defect, so often found in interior work, especially when done against the light, may be obviated by using a suitable mask.

A print is made from the negative just

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as it is, and on this the outlines of the masses are pencilled and transferred to a sheet of paper of medium thickness, rather larger than the printing-frame. With a knife the outlines are cut out, and the mask so made can be used thus: The plate and paper having been placed in the frame in the usual way, the mask which has been cut out is superposed on the front of the frame, so that its lines coincide as nearly as possible with those of the negative, and is fixed there by means of drawing-pins. This has to be done with great care, because on it depends one's success.

If it so happen that the outlines are scarcely visible on the back of the negative, thus rendering it difficult to secure perfect coincidence of mask and negative, they may be traced temporarily on the glass side before placing the negative in the frame, removing them when once the mask is in position by passing the finger through the openings in it. Printing must be performed in the shade.

It should be remembered that the mask must never be placed in contact with the negative, but at least a quarter of an inch away from it, so that the shading due to the mask may blend harmoniously with the rest of the picture. This is printed in the usual way by removing the mask after it has done its work and allowing the negative to print out. To keep the mask at a due distance from the negative a printing-frame with bevelled edges is indispensable. When there is any chance of the light falling too obliquely, and so under-cutting the mask as it were, the frame during printing must be put at the bottom of a box with high sides and of about the same size as the frame itself. For a similar reason it may be necessary in some cases, if the parts to be corrected are so near together as to leave only a very small space between them, to use a mask with only one opening at a time, using a separate mask for each separate part.

So far we have been considering the case of a negative with too strong contrasts. Now let us take the case of a negative which is in parts too thin. We may use a mask without any openings at all, and print the denser parts deeper by its aid, so that we may give to that particular portion of the picture its true value.

An example will explain this better. We have to print from a negative of the interior of a forge, of which the upper part, on account of too great difference in illumination, is so feeble that it would produce nothing but a black patch in the print. This may be prevented by printing the dense part of the negative while keeping the thin part covered. To do this a mask is used with its edge cut according to the line of demarcation between the two masses, and fixed at a slight inclination on the printing-frame. The mask must encroach a little beyond the part to be protected, according to need. As to its inclination, the operator will be guided by his experience and taste. When the denser part has almost attained the desired depth, the mask is removed and the thinner part printed, which will be found gradually to blend itself with the other. To obtain good gradation the frame must be turned round at intervals.

A mask is also useful in printing in clouds. We must first print the clouds on a piece of sensitive paper and in a printing-frame a size larger than the negative. When this has been done we can print the landscape on the part which has been protected by the mask, taking care that the gradation of the sky is merged into it. The use of the larger printing-frame and paper facilitates this part of the work.

There are, of course, cases where the printing-in of clouds presents great difficulties, but these can always be surmounted with a little care and perseverance. Thus in a landscape with trees standing out against the sky the process at first sight seems complicated, but it is not so in reality. A mask is cut out, leaving all those portions of the sky on which the clouds are to be printed transparent, and is fixed in front of the printing-frame containing the cloud negative and sensitive paper. After exposure the mask is removed, and the cloud negative is replaced by the landscape negative, and the landscape printed on the same paper after having, by looking through, made the clouds fall into their proper positions.

As has been pointed out above, the mask must not touch the negative, but should be separated from it at the distance which seems most suitable for the proper

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blending of the two images—obtained by allowing the light to penetrate under the edges of the mask.

There are many other uses to which a mask may be put; the many cases in which it may prove a valuable auxiliary are too numerous to detail here. The photographer must make use of the method according to his own individual ability and skill. It may be as well to add that it is much less practicable with development papers, but even with these satisfactory results may be obtained if the printing be done by a very feeble light. Otherwise a hard line of demarcation would be visible.—*Photography*.

THE PLATINOTYPE PROCESS.*

I.—THE CHEMICALS AND PAPERS.

In 1894 Von Hübl published the most complete work on the platinotype process, and a second edition has just been issued, which contains a notable addition in the shape of the author's researches on sepia printing, and a digest of the same may be of interest.

In the introduction the author divides the process into three kinds: (1) That in which paper coated with ferric oxalate is exposed to light and then developed with a solution of a platinum salt and potassium oxalate; (2) here the platinum salt is added to the ferric oxalate, and the paper sensitized with the mixture and the print developed, after exposure with solution of potassium oxalate; (3) the developer is mixed with the sensitizer, and it is only necessary to immerse the print in water after exposure in order to have a perfect result.

With regard to the first process, Hübl states that it is but rarely used, but that it deserves the fullest consideration, as it exceeds the two other processes in beauty of the results, and in the safety and ease of manipulation. The second process includes both the hot and cold bath processes, the former requiring a shorter exposure and giving softer results than the latter, while the third is the print-out process.

Ferric oxalate is the principal light-sensitive salt, and this is used in the form of a 20 per cent. solution with 1 or 2 per cent. of oxalic, and this is called the "normal iron solution."

The usual method of preparing ferric oxalate is by precipitating ferric hydrate from ferric chloride by means of caustic or carbonate of soda, and digestion of the ferric hydrate with oxalic acid. This method necessitates, however, a quantitative analysis of the resultant solution, in order to ascertain the percentage of ferric oxalate. In order to avoid this, Weissenberger (*Photo. Corresp.*, 1899, pp. 420–609) suggested the use of ammonia iron alum dissolved in hot water, and precipitation with carbonate of soda, and Hübl still further improved this method of using ammonia and doing away with filtration.

Ammonia iron alum, $Fe_2K_2(SO_4)_4$, $24HO_2O$, is a commercial salt and a constant composition, and contains 11.62 per cent. of metallic iron. It must be kept in closed bottles or it effloresces and the percentage of iron increases.

Ferric oxalate contains 29.78 per cent. of metallic iron, and there is, therefore, in 100 c.c. of a 20 per cent. solution 5.96 or, in round figures, 6 grammes of metallic iron, and the equivalent quantity of ammonia iron alum is 51.63 grammes, and to allow for a small loss 52 grammes should be used.

To prepare this salt, Hübl recommends a tall cylindrical measure of about 7 cm. diameter and 25 cm. in height. This should be marked by a strip of paper outside, at the level of 85 c.c. In this measure 52 grammes of powdered ammonia iron alum should be placed, and 20 c.c. of liquid ammoniæ fort. 880 and 20 c.c. of water poured on to it, and the mixture well stirred for several minutes. If there is no smell of ammonia, a few drops more of ammonia should now be added and

* A Digest, by E. J. Wall, of "Der Platindruck." Arthur Freiherrn von Hübl. Halle a/S: William Knapp. Reprinted from the British Journal of Photography.

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the mixture again well stirred. The measure should be now filled up with water, the precipitate well stirred or shaken up, and then left to settle. When it has settled down the water should be decanted or siphoned off, and the operation repeated until there is no longer any smell of ammonia and it does not turn litmus paper blue.

It is important that the total bulk of the mixture should not exceed the level of the 85 c.c. mark. When it has reached this level 21.5 grammes of pure oxalic acid should be added and the mixture well stirred, and, if necessary, left to itself for a little time. A perfectly clear solution will be obtained, which will measure 95 c.c. This must be made up to 100 c.c. It is essential that the addition of the oxalic acid should be made by yellow light, and the resultant solution, which is a 20 per cent. solution of ferric oxalate, must not be exposed to daylight. The solution should be greenish-yellow when examined by daylight, and, on the addition of ferridcyanide of potash, should turn dark green, but give no blue precipitate.

Another salt which is useful is oxalate of lead, which may be obtained commercially, but can also be prepared by dissolving 20 grammes of acetate of lead in 100 c.c. of water, heating gently and adding 4 grammes of oxalic acid, collecting, washing, and drying the precipitate. One gramme of the lead oxalate should be added to every 100 c.c. of the iron solution, and the resultant mixture well shaken, filtered, and labelled "Lead-iron Solution."

Sodium ferric-oxalate, $Fe_2(C_2O_4)_6Na_6 + 11H_2O$, it is advisable to buy. It should be in clear, green crystals, though if any adherent yellow powder is present it is not of much moment. Fifty grammes of this salt should be dissolved in 100 c.c. of water, and the solution filtered and be kept in the dark, and labelled "Soda-iron Solution."

Two platinum salts are required, both of which can be obtained commercially and which are not worth the trouble of preparing.

Potassium chloroplatinite, K_2PtCl_4, occurs in red crystals, which are readily soluble in water, and a stock solution of 1 to 6 of distilled water should be prepared, and kept in the dark.

Sodium platinic chloride, $Na_2PtCl_6 + 6H_2O$, occurs in yellow prisms, and when heated to 100° C. loses its water of crystallization and becomes a yellow powder, one part of which dissolved in ten parts of distilled water forms the stock solution. In order to avoid the trouble of heating, practically one-fourth more of the hydrated salt may be used instead, that is to say, 12.5 parts instead of 10 parts.

Hübl points out that the chemical reactions in platinotype printing have been represented by Berkeley as follows: During exposure, $(Fe_2(C_2O_4)_3 = 2FeC_2O_4 + 2CO_2$, and during development, $(6FeC_2O_4 + 3K_2PtCl_2 = 2Fe_2\ (3_2O_4) + Fe_2Cl_6 + 6KCl + 3Pt$. But, from arguments which we need hardly recapitulate, he comes to the conclusion that formic acid is formed, and that this plays a considerable part in the reduction of the platinum salts, especially during development.

Considerable importance is laid by Hübl on the raw paper used, and he points out that its surface has considerable influence on the results, as the image is not embedded in any colloidal vehicle. The color of the paper is seldom pure white, being generally blue or yellow. The former gives bright, clear high lights, while the latter gives softer effects. For small prints with smooth surface the blue-tinted papers are better, while for large prints the yellow tint is to be preferred. So that the prints will not turn yellow afterward, pure linen papers should be used. The sizing of the paper is of importance, too, and those papers sized with resin are the best. All papers are improved by a sizing preliminary to sensitizing. Gelatine, arrowroot, carrageen, tragacanth, agar-agar, etc., may be used. Gum arabic and dextrine cannot be used, because they are soluble in water and would dissolve in the developer.

Gelatine has the disadvantage of causing numerous bubbles while sensitizing, and also it tenaciously retains traces of platinum salts, so that the prints on paper thus sized have a tendency to yellow in time. If further gives a slightly-grazed surface.

Arrowroot, carrageen, and tragacanth are very satisfactory, and always give matt surfaces. Agar-agar combines the good

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qualities of arrowroot and gelatine. To prepare the preliminary coating with these substances, ten parts of each should be used to every 500 or 1000 parts of water. They should be allowed to swell for an hour, and be then dissolved. To the gelatine solution five parts of powdered alum should be added, and the mixture must be used warm. Arrowroot must be mixed with cold water and added to boiling water and stirred till a clear solution is obtained. For agar-agar five parts should be soaked for an hour in 500 parts of cold water, boiled for five minutes, and then filtered through fine muslin, and then allowed to cool, and the jelly thus obtained pressed two or three times through coarse linen, and the resultant finely-divided mass distributed over the paper with a brush.

The following are the papers specially recommended: Smooth Rives and Steinbach paper, No. 27, of the Neusiedler Actiengesellschaft für Papierfabrikation in Vienna, the roll papers of Schleicher and Schull of Düren.

The English drawing-papers by Whatman and Harding have a very good grain, but are, unfortunately, animal (gelatine) sized, and this must be removed. To effect this the paper should be placed in a dish of hot water to which some sulphuric acid has been added, and after about an hour the water must be poured away and the paper washed with repeated changes of water, to which, finally, some ammonia should be added. It must then be pressed between blotting paper to dry, and subsequently sized with a 1 per cent. solution of agar-agar, applied hot and liberally with a brush, and then dried, again treated with the solution, dried, and then with a 2 per cent. solution of arrowroot.

NEWS AND NOTES.

Photography in Colors Once More. The Cincinnati and Pittsburg papers announce that the problem of photography in colors has once more been solved, this time by Henry E. Kock who is said to be an instructor in the department of biology at the University of Cincinnati. In an interview Mr. Kock is reported to have said: "The method of rapidly making colored photographs is a very simple one, and yet no one ever has thought it out, and I myself made the discovery by pure accident. While working at the university along the lines of a Vienna scientist I was called away from my work for a few minutes, and when I returned, upon looking at some plates that I had left exposed to the sunlight, I made the discovery of methods by which colored photographs may be made with the swiftness of merely placing a negative under a plate and removing it instantly. I am working out the details of the discovery.

"The principles involved are: first, the light decomposes diazo compounds; second, compounds formed by adding an acid sulphate to these compounds, from diazo sulphates, and these do not act with phenols."

The inventor of this method is said to have recently become a member of the Royal Photographic Society (London), before which society he will lecture this summer, publishing his process in part. Mr. Kock claims that two months will determine the practical success of the process, and speaks of a Kock plate for color photography to be ready before the year is out.

An Old Dispute. Judge Henderson, of Edinburgh, was recently called upon to decide a question which has been, and still is, the most disputed point between artists and photographers. The plaintiff in the case, William Hamilton, brought an action against Barclay Brothers, photographers, Princes Street, Edinburgh, to have it declared that he did not purchase a certain photograph from them, stating that "the picture failed to conform to the essential rules of art, and that altogether it presented an incongruous appearance." The Sheriff, like a wise man, refused to be drawn into any discussion of abstract or æsthetic principles, contending that the plaintiff, on his own showing, had signed the order form for the photograph, that he received the picture, and would be well advised to pay for it. A judicial decision on a much vexed question is thus still wanting, and the artistic claims of the photograph are still in the balance.

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MISS MATHILDE WEIL AND HER WORK.

[In a recent issue of the Chicago *Record-Herald* we find the following interesting account of Miss Mathilde Weil, a Philadelphia professional, whose portrait work has been widely recognized as of the highest quality. After making due allowance for press verbiage we believe that our readers will find profitable suggestions in the account. In publishing it we take the opportunity to congratulate Miss Weil upon her success. We have seen and admired her work, and it deserves success in every way. —Editor W. P. M.]

The question of opening new employments to college women is one that many observers consider rather carefully. The profession of teaching is, of course, a definite one, and offers an assured income from the very beginning. Therefore, it is not strange that most girls after receiving their A. B. drift into it.

The proportion entering other professions is comparatively small, and business thus far has attracted very few.

Miss Mathilde Weil, consequently, a Bryn Mawr graduate of the class of '92, deserves much credit for having shown what a well-educated woman can accomplish in artistic photography.

Miss Weil is a Philadelphian, and an exhibition of her most successful work was given not long ago in the rooms of the Philadelphia Camera Club.

The subjects are numerous, but portraits of elderly women and children predominate, and these are usually figure studies, taken in their home surroundings.

A boy on his hobby-horse, a child at his toy piano, two children playing on the beach, a little girl surrounded by her dolls, an elderly woman in a high-backed chair, all these appeal to us as compositions rather than as simple portraits.

In college Miss Weil made no special study of chemistry or physics, or any of the branches that might be supposed to pave the way toward photography. Instead her work lay chiefly along the line of literature and political economy, and she took a year of graduate work in addition to the four years' course.

After leaving college she was engaged in certain lines of literary work, but her artistic training led her to seek some field for her artistic taste.

Her art training included courses in the Philadelphia Museum of Industrial Art and Textile School, with considerable attention to modelling and designing, and she has had other instruction, as, for example, a summer class at Amisquam.

It was not so very strange, then, that when she had spent some time in amateur photography she should begin to look at it with a professional eye.

Her art training had given her an artistic training for her work such as few photographers possess. But her study of political economy had led her to believe that she had no right to enter the labor market in competition with any but the highest bidders.

Certainly no woman, and probably no man, outranks her in price—$25 for the first appointment, and $2.50 for each appointment after the first.

Of course, before Miss Weil started out as a professional she had practised more or less on friends. With her high standard this was, of course, an expensive amusement, and she found that those who desired her skill were willing to pay well for it.

Miss Weil is now a professional photographer, with her studio in the heart of Philadelphia. But she is constantly asked to go to outlying country places, as well as to Baltimore and New York. Her success seems to justify the principle on which she started, that photography is no more mechanical than painting.

The lenses, the plates, are the instruments, but the photographer who is an artist, like the painter, can impress his individuality on his work.

On this account Miss Weil makes a very complete study of her subject. The photograph should be of real value as a picture, something that even people outside the family will like. Its artistic strength should lie largely in the matter of lights and shades. The tonal values and the relations of the masses are the things chiefly to be

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considered, and the result is that the present exhibition gives the impression of a series of fine photographs from fine paintings rather than from life.

The reason for the naturalness of Miss Weil's work is her shunning of the skylight. Whenever she can do so she photographs her subjects in their own homes, and when they come to her studio they still find no skylight.

In the matter of subjects she has no choice, although the elderly and the youngest people are usually the least conscious in their poses, and thus the most satisfactory.

Although Miss Weil has been in business only four years, she won, two or three years ago, the Royal Photographic Society's medal offered in London, which a few years previously had been won by Miss Emma Fitz, of Boston. Although this in the eyes of the photographic world is the most important of Miss Weil's prizes, she attaches as little importance to it as to the many others, national and international, that she has won.

She cares more to satisfy herself and gain the approval of discriminating critics than to win prizes.

This, to be sure, is coming to be the opinion of most artistic photographers. They prefer to be invited to send their pictures to an exhibition where the standard is high rather than to be permitted to send them to one where the test of merit seems to be the winning of prizes.

Miss Weil's studio is a fascinating apartment, with none of the paraphernalia for photography in sight. On the walls of the reception-room hang a few of her photographs in artistic frames.

There are also occasional water colors and other well-chosen pictures, both in this room and the room with the north light. Although this latter room might by courtesy be called the operating-room, it looks simply like the sitting-room of some private house.

The rugs in both rooms are well chosen, the furniture is antique and simple in outline. A shelf running around the room some inches from the ceiling hold numerous articles of bric-a-brac—busts, statuettes, vases.

On one wall is a collection of old French fans, on another a number of odd posters. An inlaid desk is in one corner, and there are many other objects around the room.

On the top floor Miss Weil has her printing and finishing-room. All her printing and finishing Miss Weil does herself, with the help of only one assistant, and her own careful attention to detail accounts in large part for her artistic success.

Artistic photography pursued in the conscientious spirit in which Miss Weil pursues it certainly opens a fine field to the trained college graduate who wishes to work along lines that are not yet overcrowded.

THE THIRD CHICAGO SALON.

[We have pleasure in bringing the subjoined communication to the attention of our readers, urging them to lend this worthy movement their enthusiastic support.—Editor W. P. M.]

Announcement. The Art Institute of Chicago has the honor to announce that, under joint management with the Chicago Society of Amateur Photographers, the Third Chicago Photographic Salon will be held in the galleries of the Art Institute, from December 16, 1902, to January 4, 1903, or later.

Invitation. All persons interested in pictorial photography as a means and medium of artistic expression or interpretation of truth, beauty, emotion, sentiment or ideality, are cordially invited to submit works for the judgment of the Jury of Selection under conditions hereinafter set forth.

Salon Ideas and Ideals. The joint management of the Third Photographic Salon is unanimously agreed to maintain the standard of this annual exhibition on the highest plane of artistic excellence.

Only such works as give evidence of individual artistic feeling, expressed in accordance with the canons of the fine arts, will be accepted by the Jury of Selection.

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Dexterity of technique in the mechanical and chemical processes of photography will be considered in judging works, but it will be completely subordinated to that composite of imaginative, creative, and technical quality which is the essential of the fine arts.

The Chicago Photographic Salon owes its very existence, as a permanent institution under the patronage of the Art Institute, to the fact that it stands for the modern aspiration toward truly artistic photographic expression, as contradistinguished from mere technical merit. Artistic merit is the primary consideration of the Salon management; technical merit is secondary.

The photograph which nobly expresses a noble conception of truth, beauty or ideality is a work of the fine arts precisely as if it had been executed by the painter or the etcher, or the sculptor in pigments, or lines or in plastics.

The personnel of the Jury of Selection insures judgment of the works submitted to it on the broadest and most catholic principles of the fine arts, viz.: Messrs. O. D. Grover, Ralph Clarkson, W. M. Clute, Edgar S. Cameron and Fredk. Richardson.

Rules and Regulations. No awards are offered, and no charge will be made to exhibitors. Each exhibitor will be furnished with the official catalogue of the Salon issued by the Art Institute of Chicago, which will be official notification of acceptance or rejection of the works submitted to the Jury of Selection.

Exhibitors may submit any number of pictures, but not more than ten pictures by one exhibitor will be hung.

The pictures will be hung in the gallery on a background of dark green burlap. They will be judged by the north light of a single large window.

All pictures submitted must be separately framed (with or without glass) or matted under glass.

The title of each picture and the exhibitor's name and address must be clearly written on the labels provided, which must be attached by the exhibitor to the back of each picture. Nothing may appear on the front of the picture except the title and exhibitor's name.

No accepted pictures may be removed before the close of the exhibition.

Arrangements will be made for the sale of pictures if desired, subject to a commission of 15 per cent.

All pictures must be forwarded at owner's risk, CARRIAGE PREPAID, and delivered at the Art Institute not later than 5 P.M., Monday, December 1, 1902.

Return charges must be collected by carrier.

All communications and all pictures submitted must be addressed to the Chicago Photographic Salon, Art Institute, Chicago, Illinois, U. S. A.

It is understood, unless expressly forbidden by the exhibitor, that the Art Institute of Chicago and the Chicago Photographic Salon shall have the right to reproduce any accepted picture in the official catalogue, or in a souvenir to be prepared during or after the Salon or in such art and photographic journals as may comply with the regulations made by the Salon Committee.

The management will use all reasonable care to prevent any loss or damage to pictures in its charge, but will not be responsible for any damage.

LOUIS A. LAMB,
Chairman.

WM. B. DYER,
E. W. THOMAS,
Committee of Publicity and Promotion.

By order of the Salon Committee.

July 1, 1902.

IT is annoying to find spots on prints that resolutely refuse to tone. They occur most often in carelessly-worked printing-rooms, and are a warning against dirty fingers. But such a print need not be wasted. As soon as refractory spots show remove the print from the toning bath, and go quickly over the places with a camel's-hair brush dipped in alcohol. Replace in the toning bath, and the difficulty will usually have disappeared.

THE factor to be considered first in buying a lens is not the size of working aperture, but the focal length.

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PHOTOGRAPHING DOMESTIC ANIMALS.

BY J. HORACE M'FARLAND.

Of the thousands who use the camera few have opportunity for long journeys after the rarer wild animals, and not many can engage in the work with enough time, patience, and accessories to make acceptable pictures of fish. Everyone, however, has chances, and constantly recurring chances, to study and to photograph the domestic animals. Dogs, cats, chickens, horses, cows, sheep, swine—some of these are within reach always, for most of us. While the zest of the hunt, the spice of danger, the long tramps afield, are missing in this work, it has its own difficulties, and its rewards are entirely adequate. The writer has a connection with an advanced and elaborately illustrated magazine dealing with country life, and he has been made very sensible, in the past year, of the great scarcity of good photographs of the familiar animals about us. An endeavor to supply certain pictures has fully brought out the difficulties to be encountered, as well as the attractions of the quest. Let us, then, in nowise despise the household pets, the street dogs, the cattle of the field, as objects of interest for our cameras, and, indeed, of profit for our pockets, if success is attained.

The "tabby" of the home is the easiest of the subjects, apparently. Endless are the ways in which cats are pictorial; endless are the contrarieties of the felines! Choose that way and place and attitude which most attract you, and try your camera on the puss. She is calm, peaceful, but by no means immobile you will find. Scan closely the lighting—you must, almost, be showing the house cat *in* the house—and make your trials. Make them at home, if you can; for strange cats, like strange babies, are not favorable to strangers at all times.

The bait of food is often suggested for luring these animals, and for securing attention, but I deprecate its use, unless the scene is plainly a feeding scene. A hungry look is not the most attractive aspect, and it is to be your art to show the sitter in a comfortable or an alert or even excited condition. Familiarity and petting will often do better than food, especially if the photographer has that spmpathy with animals which they so promptly recognize, and without which he is at a very great disadvantage in the handling of our domestic pets and helpers.

Delightful work can be done with kittens, given the art of handling them. Where several are photographed at once, a very quick light becomes essential. Outdoors on an overcast day, or in places protected from the direct rays of the sun, this work can be done to advantage. Again, take care of the lighting; the most pictorial and satisfactory effects are not had when the camera light is full on the front of the subject. Before me at the moment are three fine pictures of a beautiful white Persian cat, "Zoroaster," by Alfred Klakring, all lighted at an angle to the camera, and so as to bring into relief by shadows the whiteness of the cat's long hair. In focusing for such a picture, look for shadows in the white parts. If you do not have them, the result will hardly be pleasing.

The familiar pets of the home, the useful helpers of the barnyard and pasture, are anything but easy to photograph. Their very charm of vivacity and alertness is the difficulty. Well do I remember a session had with a splendid and most friendly Scotch collie, who would look at me with rapt attention while my head was under the focusing cloth, only to bound high in the air out of sheer playfulness, when I emerged, all ready to snap the shutter! Many plates were spoiled before we fully agreed. But dogs do acknowledge authority, and will sometimes "stay put." If the alert and active life is to be shown, we must work outdoors, and with quick shutter. The sleeping dog may serve for the slower indoor exposure; and this points the fact that in all this work, whether it be dog or grizzly bear, a *series* of pictures of the same subject is most desirable if it can be had, showing the animals in various attitudes.

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As some dogs are of large size, it is well to caution the naturalist photographer as to the focal length of his lens and the position of the animal. With an ordinary lens of say six to eight inches' focus, an astonishing distortion shows if the big dog is posed with head away from the camera. A full or nearly full side-view, or a view with the head toward the camera, will be best. If several dogs are grouped, consider this matter all the more carefully, to avoid a grotesque result.

With the most rapid plates and a focal-plane shutter, we may succeed in catching the dog's picture as he runs at full speed—and thereby will we acquire some astonishing knowledge as to what queer positions four feet can assume. And the point will be emphasized that instantaneous pictures of an animal in motion do not *show* motion at all.

Of the domestic fowls very charming pictures can be made, especially when the soft, fluffy little balls of down that include very young chickens, ducks, and geese are considered. The swimming animals give a particularly fine opportunity, for the reflection of light from the water affords so strong an illumination as to help greatly. Chicks feeding are good subjects for pictures, practice, and patience, and a little child in the composition adds much to its charm, if properly placed.

Very few good photographic pictures of horses are extant, comparatively. It is not because this noble beast, the friend of man, has not attracted the ubiquitous camerist, but because he has baffled, to a great extent, the efforts to picture him. There are, of course, vast numbers of mere photographs of halter-led animals, but these are not much better, from the pictorial standpoint, than photographs of stuffed museum specimens of birds and the like. Yet such work, to show the "points" of the horse, must be done, I suppose, and it will not be amiss to quote the suggestions of an experienced and somewhat artful professional worker, as recently presented in the New York *Tribune:*

"The best results are obtained by placing the horse on a slight incline, so that the fore feet are a trifle higher than the hind feet. This position throws the head up. Then snapping the fingers or making any slight noise will cause the animal to prick up his ears, and at the moment when he is in this position of attention the photographer makes the picture.

"When horses in harness are to be photographed they must be posed on level ground or on a very slight incline. To make them look alive a hat or a card is sometimes tossed up in front of them, and at the moment when they look up the snap-shot is made.

"When pictures of horses in action are made we usually place the camera near the ground, and by that means we get the best hoof positions, which cannot be secured when the camera is held or placed at the ordinary height. To make pictures of jumping horses, the same method is employed, and the height of the jump is sometimes exaggerated by placing the camera below the track-level. An excavation is made in the ground for that purpose, and pictures made from there increase the apparent height of hurdles and make a small jump look something remarkable."

The horse in real action is another matter, and we must go after him just as we would any other interesting animal. If he is to be pictured at work, select the point of view past which the horse will come, being most careful that the camera is so placed as to see the animal either broadside or somewhat "head on." Ignorance or neglect of this dictum produces some remarkable results. I am minded of my own attempt, some years ago, to make a photograph of a horse's head from the carriage he was pulling, with a "fixed-focus" camera. The film on development showed in the distance a diminutive head, but the hindquarters of the horse, occupying very fully the foreground of the photograph, were anything but diminutive!

To secure pictures of a horse in active motion a very quick exposure must be made, and as the human eye cannot follow the complex movements of a horse's feet when trotting, the result, even when successful technically, may be anything but pleasing.

Fine pictures may be made—if the worker is able to compose them—with real working horses as subjects. What is a

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better exemplification of power than the strain of a good team pulling a loaded wagon up a stiff incline? How the great shoulders reach forward, and the strong legs set themselves surely on the roadway! Or a team plowing—here is a fine pictorial subject, for it shows both horses and man in action, and, therefore, lifelike, and the speed is not so great as to make good work improbable.

I cannot resist the temptation to express a hope that in the photographing of horses, pictures may occasionally be made of "bob-tailed" horses, deprived by silly fashion of their most useful and ornamental caudal appendage; for their photographs are always disgustingly grotesque, and serve well as tracts against this cruel and foolish practice.

Let not the aspiring maker of horse photographs feel any surprise if some of the negatives from which he has hoped much show an entire absence of one leg, the entire tail, or even the head. Be not alarmed; you are only experiencing a demonstration of the fact that a horse's motions in chasing a fly are somewhat quicker than the leaves of the average camera-shutter.

To get pictures of the horse in his most natural and graceful attitudes, one must find him at liberty in a field. Here even the most sober cart-horse shows his joy at the freedom that has long been denied him. Patience and a quick shutter will tend toward fine results in photographs of the many free and unconstrained positions constantly recurring under these conditions. A good hand-camera, or the twin-lens or Reflex boxes, will also help to get good things without an undue use of patience and plates.

THE SELECTION OF LENSES FOR STUDIO WORK.

WHETHER from an increase in the number of recruits in the already crowded ranks of professional photographers, or from an aggregate of causes unknown, we have had, for some time past, says the editor of the *British Journal of Photography*, an unusual number of queries relating to the focus of lenses to be used for certain classes of work in studios of specified dimensions. The general trend of these inquiries has been in the direction of the employment of one lens to do a variety of work—a lens, for example, to take cartes, cabinets, and large heads, or, possibly, to cover also a large plate. Now, as the focus of a lens is not like an accordion, capable of being expanded or contracted at will, it follows that its adaptability is rigidly fixed, and subject to exact mathematical limitations. How this works out in practice we will briefly indicate, premising at the same time that a one-lens man would be ruthlessly handicapped in the race for business success.

It ought not to be necessary, though facts show that it often is so, to point out that in regard to the sizes of figures or heads taken under fixed conditions the focus of a lens only is the governing factor, the question whether it is a portrait lens, an anastigmat, a rectilinear, a wide angle or a narrow angle, not governing in any sense the size of the picture taken from a given standpoint, this, by the way, whether portraiture or landscape be the work in hand.

The selection of a type of lens has, however, to be made, and the universal consensus of opinion points to a "portrait"—*i. e.*, a Petzval type of lens for studio work, though it is the dearest kind of instrument. The reason for this is obvious. Although a modern anastigmat or a rectilinear is suitable for most purposes, occasions arise when the utmost rapidity of action is a paramount consideration. This is only attainable with a portrait lens. Further, a portrait lens is capable within its own limited field of view of an amount of critical sharpness of definition that is unequalled. Where more modern lenses approach them in rapidity the price approaches at the same rate, and may, indeed, pass that of a portrait lens. We are assuming all through that one lens only or, at most, a limited number is desired. If no such governing factor interferes, then it may be pointed out that with a

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given focus, excessive rapidity not being absolutely necessary, an anastigmat of one form or another will be more advantageous for taking groups, especially when the length of studio is restricted. A portrait lens has a very small area of sharp definition, working at full aperture, say *f* 3 or *f* 3.5, sharpness must not be expected much outside a circle of a diameter equal to a third of the focus. Stopping down will increase the dimensions of this circle bounding the area of sharp definition, but with any diaphragm likely to be used in a studio a portrait lens will have very poor covering power, compared with the other slower lenses. We should put from one-half to two-thirds of the focus as the utmost maximum of the diameter of the circle in which good definition can be looked for when employing any lens founded on Petzval curves, for the fact remains, that to this day, the quickest lenses in common use, the so-called "portrait lenses," are but slight modifications of those whose construction was devised by Petzval more than half a century ago, and the introduction of which rendered photographic portraiture a practical possibility. Within their own limited area, when well constructed, their freedom from spherical aberration is so great as to give a critical definition with a large aperture that no other lens can reach. But, as we say, this area is extremely limited, and the moment it is overpassed spherical aberration increases so rapidly that it can only be got rid of by the use of small diaphragms, thus reducing the use of the lens in practice to the level of those of a cheaper type. It may be objected that we are laying unnecessary stress upon definition, seeing that the tendency of modern work of an artistic type is in the very opposite direction. There would be some ground for advancing such an objection, but then it must be borne in mind that we are writing more especially for the photographer whose expenditure in lenses has to be reduced to the lowest limits, and who wants to have as many possibilities as possible under his control. He knows that the general public still hankers after sharpness, and will have it. And, again, the work he will have to do will probably be most varied in character, and he knows that if he desires to tone down an obtrusive degree of sharpness it is very easily done, apart even from that valuable means of introducing a graduated amount of spherical aberration over the whole arc of the picture obtainable by the construction introduced by Dallmeyer the elder many years ago. He knows, too, he may have to do enlarged work—perhaps a life-size head from a full-length "carte" —and if he have not critically sharp definition in his original negative his enlargement will be useless. Our remarks are less applicable to the still small number of professionals whose work is specialized, for in photography, as in physic, the specialist is a growing factor. We were conversing with a well-known professional portrait photographer the other day, and he informed us that he had abandoned all outdoor work; he would not take a group; he confined himself entirely to single figures, and few of those full-length, and he was able to command prices that were almost fabulous. Such a one need look neither at the price of a lens nor the number required for the variety even in his limited scope. We write for the benefit of the larger majority, and in a succeeding article we purpose giving such working details as will enable anyone to gauge his possibilities and accommodate them to his pecuniary restrictions to the best advantage.

THE preparation of carbon supports is dealt with in a note in *Photographische Kunst*. The formula is (*a*) a 5 per cent. solution of gelatine, dissolved at a temperature between 122° and 140° F.; (*b*) a 2 per cent. solution of chrome alum. For coating the support, one part of the alum is mixed with ten parts of the gelatine, and the solution is heated to 95° F. and poured into a dish which has been warmed. The sheets of paper are floated on this from one to two minutes, and are then hung up to dry. This gives a coating to the support which will prove insoluble at the temperature used for developing carbon prints. The advantage of preparing one's own support would seem to be confined to the fact that any color of paper may be chosen. This, as a novelty, may occasionally prove an advantage, from either a pictorial or a financial point of view.

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PROGRAMME OF THE OHIO-MICHIGAN CONVENTION.

To be Held at Gray's Armory, Cleveland, August 27, 28, 29.

WEDNESDAY morning: Practical demonstrations of various papers and processes. Wednesday afternoon: Address of welcome by Tom L. Johnson, Mayor of Cleveland; an address by the President of the Association, C. S. Bateham; illustrated lecture by William J. Edmondson on "The Arrangement of Groups, and a Word about Lighting." Wednesday evening: Social session.

Thursday morning: Demonstrations; suggestions on business methods by H. M. Fell; "Helpful Thoughts," by Prof. A. H. Griffith, director of the Detroit Art Museum. Thursday afternoon and evening will be given up for the dealers and manufacturers to transact business.

Friday morning: Practical business talks by a number of photographers; comment and suggestions by Charles C. Curran, A. N. A., New York; election of officers; selection of next meeting place; announcement of awards. Friday afternoon the display will be opened to the Cleveland citizens, who are greatly interested in this convention; for the entertainment of the members a trolley ride about the city is promised, ending at Manhattan Beach, with a dinner in the evening. Cleveland is an ideal summer city, and the hall generously furnished by her citizens could not be surpassed. Both the date and place are convenient for the manufacturers and dealers, who will be there with large exhibits.

Professor Griffith and William J. Edmondson are artists well known and appreciated by our members. Charles C. Curran, of New York, assistant director of fine arts at the Paris Exposition and later at the Pan-American, will also be with us, and his suggestions will be found helpful and interesting.

While developing the art side we do not intend the business side to be unduly restrained. Business means making things that people want, and business methods mean the best way of doing things. Practical suggestions along this line will be ably presented by some of the best business men in our profession.

All who are interested are cordially invited to meet with us, and we promise those who attend a most enjoyable time.

C. S. BATEHAM,
President, Norwall, O.

THE NEW ENGLAND CONVENTION.

THE Photographers' Association of New England will hold its sixth annual convention at Boston, Mass., August 20–22 inclusive. As this body consists of five New England States, and lively ones at that, it is evident that the Conventions of the P. A. of N. E. are conspicuous for attendance and results. The officers for this year are as follows: Mr. C. W. Hearn, president, Boston, Mass.; Mr. Morris Burke Parkinson, first vice-president, Boston, Mass.; Mr. Geo. M. Bolton, secretary, Rockville, Conn.; Mr. S. M. Holman, treasurer, Attleboro, Mass.; Mr. W. C. King, Portland, Me.; Mr. W. R. Call, Manchester, N. H., Mr. H. E. Cutler, Barre, Vt., Mr. G. E. Tingley, Mystic, Conn., and Mr. L. L. Anderstrom, Bristol, R. I., State vice-presidents; Press Committee, Mr. Wilfred A. French, Boston, Mass.

It is the aim of the present administration to make the coming convention not only a marked success, but an event surpassing all preceding ones in this section of the country as regards high artistic standard and large and brilliant attendance. The exhibition of pictures promises to be one of rare excellence, and it is expected that several European societies will cooperate with their New England brethren in making the artistic success of the exhibition one to be remembered. One of the features of the exhibition will be a splendid exhibit by the Society of Photographic Artists of Moscow, Russia. This body

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of photographers is the most eminent one in the Russian Empire, and its contributions will be looked for with the keenest interest. In keeping with the high standard set by the President and his staff is the principal entertainment, which will be a grand orchestral concert, with notable instrumental and vocal soloists, given by the Boston Festival Orchestra, a body of musicians whose fame extends from the Atlantic to the Pacific. This will take place the evening of the first day of the convention, viz.: August 20, and is open to all members. There will be a lecture by the brilliant and versatile speaker, Mr. W. E. Griffith, of the Detroit Art Institute, Detroit, Mich.

Assured of the most brilliant success, every officer of the P. A. of N. E. has worked with the utmost enthusiasm, regardless of the amount of time, patience and trouble involved, all realizing that the results will be well worth every effort expended. A feature well worthy of note is the fact that the Entertainment Committee has received the contributions from the dealers and manufacturers and placed the necessary sum in the bank, *before July 1*, experiencing no difficulty in raising the required amount, which is considerable in view of the amount and grade of work it has undertaken and the pleasure it promises to all those who attend the next convention of the P. A. of N. E. at Boston, Mass., August 20–22, 1902.

WILFRED A. FRENCH.

SOME POINTS IN CONNECTION WITH GOOD WILL.

BY AN ACCOUNTANT.

THE expression good will is one which is now so frequently used that there is, perhaps, some apology needed for introducing the subject to the notice of the readers of this paper. There are, however, so many of us to whom a knowledge of the subject connected with the good will of a business may one day or other be useful, that I have ventured to write on the subject.

A definition of good will is by no means an easy thing to give—thus we have as the favorite one, "The benefit arising from connection and reputation, the probability of the old customers going to the new firm which has acquired the new business, while Lord Eldon, in Crutwell *vs.* Lye, said that "the good will of a trade is nothing more than the probability that old customers will resort to the old place." There are beside these numerous other ones, but the above are, perhaps, sufficient for our purpose.

Good will is a term not only applicable to a trade, but also to a profession, and, indeed, in this latter case, it is often the most valuable asset of the concern.

On purchasing or negotiating with a view to purchasing a business it will nearly always be found that an amount will have to be paid for the good will of the concern, and as this is not a tangible asset, it is at once asked in what way the figure is arrived at. The circumstances of each individual case can alone be taken as our guide, but it is generally conceded, as pointed out by Mr. L. R. Dicksee, F.C.A., in his excellent treatise on the subject, that the following circumstances must exist, and that the person to whom the good will passes must in all cases have—

1. The right to carry on business at the same place as that at which it was formerly carried on.

2. The right to use the old name, and to represent himself as the legitimate successor of the former proprietors.

3. Exclusive right to so represent himself.

As might be imagined, No. 3 has been fruitful of much litigation, but it was finally settled by the House of Lords in Trego *vs.* Hunt, 1896, App. Ca. 7, that "Where the good will of a business is sold (without further provision), the vendor may set up a rival business, but he is not entitled to canvass the customers of the old firm, and may be restrained by injunction from soliciting any person who was a customer of the old firm prior to the sale to continue to deal with the vendor or not to

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deal with the purchaser." It is obvious, therefore, that the purchaser should be careful to protect himself from the competition of the vendor by entering into express stipulation with the vendor, binding him not to compete within certain limits.

The attitude of the retiring partner or partners is of very real value in estimating the value of the good will—*e. g.*, can they assist, and will they do so, to make the new undertaking successful? will they oppose it? or are they incapable of doing either? Your actual position is one of great importance in determining the amount you should pay for the good will; thus, if you are becoming a partner in place of one who is retiring altogether from business, it is much more valuable than if you were merely taking the place of a partner who was expelled; for, in the first case, you would suffer no disadvantage by reason of the outgoing partner, but, on the contrary, would probably reap certain benefits he could give you, while in the second case you would be almost certain to have the disadvantage of the expelled partner setting up in competition with you. We may next consider the basis of our valuation of good will. This is generally taken upon a certain period's purchase of the average net profits of a business—*e. g.*, the good will of a wholesale or retail trading business is worth from one and a half to four years' purchase; of a manufacturing concern, of from one to three years' purchase, and of a professional concern, from one to two and a half years' purchase. Certain classes of enterprises will be worth a great deal more; for instance, the good will of this paper. Newspapers frequently fetch ten years' purchase of profits, and the reason is not difficult to comprehend.

Here we have the good will, consisting chiefly of the name, for if, instead of being called the *British Journal of Photography*, it was called *The Mothers' Friend*, I for one should have been the loser, for I should not have ever purchased a copy! Again, it matters very little to its subscribers whether the offices are in London or in Manchester, and thus expenses can be kept down.

As regards a photographer's business, it is a most difficult matter to form any opinion on. So many things have to be taken into account. The business may have been built up entirely through the skill of the individual; in this case, the personality might not be able to be replaced, and so the trade would vanish. The increase or decrease of the profits must be carefully noticed, and the prospects of the future fully realized. Nothing in the nature of an extraordinary character would be taken into the account, as, for instance, the prospects for extra business due to the Coronation. A business may show a decrease of profits for the last year or two, and yet the good will of it may be worth a considerable sum, for the loss may be capable of ready explanation—*e. g.*, war or other national calamity; but it need hardly be stated that a decrease of profits is so very significant of non-success in all ordinary cases that it will require very striking evidence to justify it.

A photographer's business, in a very large number of cases, may almost be estimated on a trade basis rather than on a professional one. I do not say this on hearsay grounds. I know it is a fact, and the reason of this is that the business could be equally, let us say, successfully worked by any photographer of normal merit and business capacity. It is quite another thing though with other cases. Thus, if I were asked the basis on which I would estimate the good will of certain celebrated photographers' business in the West End, I should be inclined to say that it was so wrapt up in the genius and individuality of the owner that in nine cases out of ten it would be valueless as a commercial asset. Of course, if one felt sure of being able to turn out exactly similar work, the good will would be of greater value, and would be a perfect example of good will as a tangible asset. But the chances are against it.

An important item in professional photographic finance is what is known as repeat orders. There may be a large stock of negatives on hand, whose life is still existing; constant orders may be booked for prints from them, either for personal or private use, or for public purposes. Here it is obvious that the existence of such an item would fall directly under the definition I have given of good will, and though the intending purchaser might feel quite

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justified in treating these negatives as stock, the seller would be equally entitled to have them dealt with as part of the good will of the concern. The merits of the claims would have to be most carefully gone into and an equitable apportionment arrived at.

While, as I have previously pointed out, the good will is usually estimated as so many months' or years' purchase of profits, it is quite possible to conceive that in many cases it is easier and more equitable to take the bulk of the business done as the basis of our computation.

This is frequently resorted to in cases where the turnover varies according to the person who is managing at the time. As pointed out by Mr. Lawrence Dicksee, F.C.A., there is an opinion rapidly gaining ground that the amount of the capital employed and the amount of time and skill which the proprietors have to expend in managing the undertaking to produce the result, should be taken into the account. If this plan is adopted, the goodwill is provided for, not on the profits actually earned, but on the profits less interest on capital and less an amount estimated to cover those management expenses which have not already been charged up. This is a plan which is so obviously just and equitable to both parties that it is to be hoped it will commend itself to the reader.

An illustration of the governing principle of the capital question will perhaps be of interest. Suppose the capital invested in an undertaking be £1000, and that with this an income of £500 per annum is obtained, and again suppose that in another case the capital invested is £5000, and only a similar £500 annual profit is realized, it stands to reason that the first business is worth a great deal more than the second one. But we have not yet made any allowance for interest on this capital. Let us make a calculation of this at 5 per cent. per annum. After making this deduction from the first, we have the net profit of £500—*i. e.*, £500 less 5 per cent. on £1000; and in the second case the net profit is £250—*i. e.*, £500 less 5 per cent. on £5000. These two illustrations will show the importance of charging interest on the capital employed.

[The American equivalent of the pound sterling may be taken as $4.86.—EDITOR W. P. M.]

The other point which I raised, namely, that of the expenditure of time by the proprietors for the purpose of managing the business is also one of great importance. Mr. Dicksee has put it very tersely in his valuable treatise on good will, and I cannot do better than quote him. He says: "It is important to remember that when a man pays for good will, he pays for something which places him in possession of being able to earn more money than he would be able to do by his own unaided exertions. To take an extreme case, for instance, no man who places any value upon his time would pay anything for an undertaking which, after providing 5 per cent. interest on its capital, did not show a further proof in excess of the amount which the purchaser might be sure of earning anywhere else without any outlay whatever." The circumstances of each individual case have to be taken into account when making the calculation for the sum to charge for the expenditure of time. In all ordinary cases a large amount is not correctly chargeable, and where only a supervision is exercised the annual amount may be very small. In a photographer's business it is usual for the proprietor to devote the whole of his time to the working of his undertaking, and so the whole of the net profits pass into his pockets. Here an estimate of the value of his labors should be made by the intending purchaser, in order that he may be able to judge as to the value of the concern to himself.

It may be that the business is capable of making larger profits if it only gets into good hands. In connection with this point it is very important to have produced to you complete accounts, showing the income and expenditure in detail for, if possible, a period of three years. You will note the style and the quantity of the work done, and the number of people employed to do this work. From this you will be able to judge as to the economic management of the adventure. As I have said, be most careful to ascertain the exact position of the proprietor, his business capa-

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bilities, and the amount of time he expends on his duties. A very large amount of business is lost through an incapable or unenergetic manager which could easily be obtained were the circumstances otherwise.

Do not, however, err on the other side and over-estimate your own capabilities, as this is an error you may easily fall into, more especially if you have a plausible gentleman to deal with as the seller. I might point out here, in connection with the accounts, that sometimes money which, during the course of the year, amounts to quite a large sum, is frequently lost by not paying in cash, and so losing the discount. Discounts, of course, are of two kinds, viz.: trade and cash. The trade discount is an allowance which is made to you by reason of your being in the wholesale business, and this amount should not appear in your accounts. Cash discount is, however, money earned by reason of your settling your liability within a certain time-limit, and this should always be shown separately in your accounts, crediting your discount account and debiting the personal account. Thus discounts appearing in the accounts as a source of profit are quite justifiable, provided they can all be accounted for. There are certain to be sources of income or expenditure which the purchaser imagines should figure in the accounts over and above the usual items. These should be looked into, and if not present, but yet which the purchaser feels should be included, an allowance must be made for them.

Such matters as the terms of the lease are outside the province of this paper, but they nevertheless require looking into, and are, indeed, the chief points almost where the continuance of the prosperity of the business depends upon its being carried on in the same place. A charge should be made for structural repairs and a depreciation be written off the furniture, etc. These items are charged to the income and expenditure account or the profit and loss account, as the case may be, so as to show the net figure at which the several assets are valued on the balance sheet. It is important to see that this is done, as otherwise you would not be showing your real net profit in your accounts.

After these points have all been carefully attended to, we shall be in a very much better position to determine the actual value of the good will than we were before. Those businesses which only need a small amount of capital and involve the least amount of skilled attention, are the most valuable, and if there is anything in the connection which establishes a quasi-monopoly, as in the case of a newspaper, this will still further enhance its value.

In a photographer's business in a large majority of cases, the ability to be able to continue the profession in the same place is of the utmost importance, for the vitality of the concern depends to a large extent on chance trade. One would therefore be careful to see that if the lease is a short term one, or nearly run out, that it would be possible to renew it. Ordinarily the renewal of a lease is accompanied by certain onerous burdens, such as increased rent, or the expenditure of a sum of money on improvements. These are points which require careful consideration, and to which too much attention cannot be directed. It is a very difficult matter to draw a distinction between chance trade and trade arising from a connection. Photographers, of course, do a very large proportion of their business on chance trade, for casual passers-by may be attracted by some exhibition in the window, and may go in and have work done for them on account of this alone. This is undoubtedly chance trade, and the situation of the place of business and the class of people who go to make up the population of the locality—*i. e.*, whether they are permanent residents or visitors, will determine its extent. On the other hand, a good connection may have been worked up for the business, and a reputation established outside the immediate locality. This is a most desirable state of affairs, and a business so happily situated will be able to obtain for its good will a large sum of money. If the photographer's business is one of portraiture only, it is so largely of a personal character, and is so intimately wrapt up in its proprietor, that the complete transfer of the concern to a new purchaser might be attended by anything but happy results. In this class of case it is exceedingly advisable to endeavor to arrange for the continuance of the services of the predominant partner, at least

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until the new partner has comfortably established himself.

But, if besides ordinary portraiture, such work as trade printing is carried on, the exclusive personal character of the proprietor in all ordinary cases is not so easy to demonstrate. It would naturally be assumed that the old customers would continue their patronage, notwithstanding the change of proprietorship. It can, I think, be clearly taken for granted that where there is profit there is also a good will, and inasmuch as profits fluctuate so will the value of the good will vary from time to time. This variation will not, however, be so violent as that of the profits, for, as I have said, it is customary to estimate the good will on an average of the profits over a period, and not on the actual profits of any one particular period.

Good will is such a very fluctuating asset that it is an exceedingly difficult matter to at any time state its value. It is clear, though, that there is a value attaching to the good will of a prosperous business, and so it is nearly always introduced into the accounts.

Where it is possible to do so, Mr. Dicksee thinks that the value of the good will should not be stated or appear in the accounts, and this is the view generally taken by accountants.

The basis on which this opinion is stated is that good will is a "fixed asset," and as such, according to Mr. Justice Romer, it is incorrect to take into account its fluctuations when arriving at the profits. "Floating assets," on the other hand, should always be taken into account at the true value on the date of the balancing. Fluctuations of good will are not taken into account for several reasons, but it is sufficient here to say that were these fluctuations taken into account the effect of a good year would be to exaggerate the business done, while if a loss were made the unfortunate position would be most ridiculously accentuated.

As a matter of bookkeeping good will generally appears in the accounts, and where a sum of money is paid for it by the purchaser of a business he will almost always be sure to wish to see it in the accounts.

The capitalization of any expenditure is a matter which should be done after careful thought, but there are certain cases where a large expenditure may be incurred for the purpose of creating a good will which can properly be treated as a capital charge. Where the purchase of a good will has been effected by a sole trader or a firm, it is a matter of considerable importance as to how the purchase price should be treated in the books. Without doubt, it should be entered up to the debit of the good will account; but it is also equally advisable to get rid of it as quickly as possible.

When you come to sell the business you will not care to show what you paid for the good will, and yet you wish to show it in the accounts. The profits cannot with any justice be written off against the good will, for the good will has no connection with the profits in the sense that it is of a wasting nature. The proper way to treat it is to debit your capital account and credit your good will account with the whole amount as soon as you possibly can,

I should, with great pleasure to myself. like to pass from this stage of our inquiry on to the purely legal side of the question, but I do not see how I can possibly do so and yet keep this article within proper limits, while maintaining its interest to ordinary readers. The amount of litigation which has taken place over the subject in its many aspects would compel me to go very much too far into details to do any credit to the matter, and would involve an amount of space being devoted to it which would be out of place in a magazine of this class. I have endeavored to place before the reader a simple and yet thoroughly practical résumé of the principles of good will, and for further knowledge of the subject I can only advise him to consult Mr. Lawrence Dicksee's most admirable treatise on the subject, published by Messrs. Gee & Co., 34 Moorgate Street, E. C., which I can unhesitatingly recommend as the best work I know of dealing with the subject generally. It has, moreover, as an introduction, a valuable chapter on the law relating to good will from the pen of the late Dr. Stevens. I have found this book so valuable to myself that I have adopted its arrangement for the basis of this article, and I have drawn freely upon it for the purposes of illustrating my re-

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marks. I will conclude by giving an example which actually came before me in practice the other day. A proprietor of a small newspaper wished to dispose of his interests in the concern, and I was asked by the intending purchaser to look into the matter on his behalf. The seller wanted six years' purchase of the net annual profits based on the average of the last three years. The accounts, such as they were, showed a certain profit to have been earned, but on more complete examination I ascertained that no interest had been charged on the capital employed, nor had any allowance been made for the time expended by the proprietor in the interests of his business. After making allowances for these essential charges and adjusting other matters, I found that instead of a profit a loss was being made, when the affair was brought down to a cold business basis and all sentiment eliminated. Notwithstanding this, I was, however, convinced that there was a certain value attaching to the good will of this quasi-monopoly, and suggested the offer of a small nominal sum for the full proprietary rights in the magazine. This course met with the approval of the intending purchaser. The case is interesting as indicating a very peculiar set of circumstances, but I need hardly say that it is very rarely that such a course of action could be advised. The nature of the business and its future prospects were the points on which the decision chiefly turned.

Each case of good will must depend so much on its own individual merits or defects that the possibility of any hard and fast rules being laid down is not practicable, but a knowledge of general principles will do much to smooth the road to a correct valuation being made.—*British Journal of Photography.*

OUR PICTURES.

AND A PRIZE COMPETITION.

We have great pleasure in reproducing elsewhere in this issue a few portraits from the far Western studio of Mr. C. A. Krauch, of Pasadena, California. For many years Mr. Krauch has been an enthusiastic reader of our pages, and during his residence in Trenton, N. J., we had many opportunities of watching his growth in the profession. Our readers will agree with us that he has achieved a remarkable degree of skill in the handling of his subjects, and that his work compares most favorably with the best produced in the more ambitious galleries of our Eastern cities. We offer him our congratulations upon his success in portraiture, and are confident that progressive students of photographic portraiture everywhere will be pleased to see the examples we present by the courtesy of their maker.

The pictures of Mother and Child by the famous artist, Le Brun, and Mr. A. W. Goodman, are reproduced as an incentive to a more careful study of this class of subjects, too often wholly neglected by photographers nowadays. There is little need to point out that in such subjects the enterprising portraitist may find a profitable specialty capable of unlimited development. It is sufficient to remind our readers of the neglected opportunities in this attractive field of work to win for it their earnest attention. In order to turn the suggestion to practical account we offer a prize of $10 in cash for the best portrait of a mother and child received before October 31, the award to be announced in our December number. We hope that many of our readers will embrace the opportunity here offered to develop their skill along the lines suggested by our engravings. Except that the pictures must not exceed 8 x 10 inches in size, and that we reserve the right to reproduce any picture received in competition, the award carries no restrictions and is open to all comers. The theme is an attractive one, and worthy of the highest skill. We will watch the competition with much interest.

Formalin, much recommended for the hardening of gelatine films, is a 40 per cent. solution of formic aldehyde in water. A 10 per cent. solution of this is a sufficient strength for hardening gelatine plates; half the strength is sufficient for gelatine papers.

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WORKROOM NOTES.

The Latest Fashion Portrait. It is just now the style for women to be photographed in a low-necked dress with a hat. Half of the smart women who have had their pictures taken during the past winter have been dressed in that way. The photographers urge women to adopt that fashion, not only because it is the most becoming for a photograph, but also because it is at the moment the most popular of all styles in a photograph.

Generally the hat is black and the gown, if the costume is also to be in the best mode, will be white.

It is only in the photographs that this style seems to have gained popularity. It is likely, in the opinion of the photographers at least, to continue in vogue with their clients another season.

But there are few places in which such a combination of periods as a hat and a low-necked gown could be worn. The only place to which such a costume would be suited would be a dinner in a public restaurant.

Film Relics. At a meeting of the L. and P. a few weeks ago Mr. Drage passed round a very interesting relic of early photographic days, being a paper film issued by Mr. Warnerke some eighteen years ago. These were supplied glued together in blocks of one dozen, similar to artists' sketching blocks, each film being separated by a piece of yellow and black paper; the entire block of films was put in the dark slide, and as each one was exposed, so it was torn off. Mr. Drage said the film never came into general use, owing, he thought, to the excessive grain; it also used to become flimsy in development. Mr. Child Bayley said this film was brought out in 1884, the paper was sized or varnished, and then dipped bodily into the emulsion, so that both sides were made sensitive. Mr. S. H. Fry remarked that he remembered seeing some roll film that had been exposed in Algeria, about 1874. This was a collodion emulsion, and coated on very thin india-rubber, and was certainly the forerunner of the kodak style of film.

EDITOR'S TABLE.

MESSRS. TAYLOR, TAYLOR & HOBSON, makers of the famous Cooke Lenses, so well known in Britain and Continental Europe, are about to establish a branch house in New York under the management of Mr. J. RONALD TAYLOR. Apart from their fine optical qualities the Cooke Lenses are widely favored for their simplicity of construction and extraordinary compactness and neatness of finish. We cordially welcome the new firm, and extend our good wishes for its success. Particulars of the Cooke Lenses will appear in future issues.

THE MILWAUKEE PHOTO-MATERIALS CO., JOHN B. BANGS, President, has taken over by purchase the old-established photo-supply houses of EDW. M. KATZ and C. T. SHAPE & CO., of Milwaukee. MR. BANGS is well known to the fraternity in his part of the world, and we are confident of the success of the new venture under his management.

THE C. P. GOERZ OPTICAL CO., New York, has several new lenses ready for introduction, about which our readers shall be informed in detail later. Meanwhile we advise a postal card to the firm for the new booklet.

MOTAK is a new intensifier introduced by KIRK, GEARY & CO., of San Francisco, who claim that it is "the greatest." A few difficult test negatives prove that Motak is indeed a remarkably efficient intensifier, and does all one would expect an intensifier to do. Motak comes in the form of a single solution, is extremely convenient, and economical in use, and deserves a practical trial. It sells at 50 cents per bottle, express prepaid.

THE Twentieth Century Finishers, made by the DORTICUS MANUFACTURING CO., of New York, are winning the popularity their usefulness deserves. Photographers who are not acquainted with the advantages these machines offer should get the circular issued by the manufacturers.

THE Photographers' Association of Kansas will meet at Emporia this year, under the leadership of G. A. STREETER, September 16th, 17th, and 18th. A lively meeting is expected, the prize list being unusually abundant in gold medals. Our readers in Kansas and neighboring States should endeavor to be present at this convention.

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MR. FITZGIBBON CLARK asks us to spread the good news that the subscription price of the *St. Louis and Canadian Photographer* has been reduced to $2 when paid in advance. Half year, $1.50.

THOSE interested in X-ray photography as a profitable side line should not fail to get a copy of the *X-ray Manual*, published by the G. CRAMER DRY PLATE Co., St. Louis, for free distribution. This excellent little booklet, full of profitable information, is written by Dr. KASSABIAN, an expert in this peculiarly difficult field of work.

THE *Souvenir Programme* of the P. A. of A. for 1902 is the handsomest convention programme yet published in this country or any other. It is a book of about one hundred pages, containing a list of the members of the P. A. of A., the Rules and By-laws of the Association, and other interesting information, with nine photogravure supplements by Strauss, Core, Parkinson, Hollinger, Schumacher, Huntington & Clark, and others. The volume is richly bound in an illuminated cover displaying a Lytrit portrait by J. C. Strauss. A special supplement gives photogravure portraits of the present officers of the P. A. of A., to whom we offer our congratulations on the publication of so attractive a programme.

CH. MENDEL, of Paris, sends to our table a comprehensive guide to *Practical Photography*, by L. P. CLERC. The volume runs to 360 pages, covering every branch of photographic activity, and is well illustrated. Published at 3 francs in paper covers.

THE *Photo Budget* is a new monthly journal, published by CHAS. H. LOEBER, 15 East 17th St., New York, at 50 cents per year, post free. It is a lively little paper, giving much useful information for amateurs, and incidentally tells of the various specialties stocked by Mr. LOEBER at his handsome store.

THE new edition of HAMMER'S booklet on *Negative Making* has been so quickly taken up that only a few copies remain. It is a useful little dark-room manual, and those who desire a copy should apply without delay to the HAMMER DRY PLATE Co , St. Louis, Mo.

R. J. GOLSEN'S *Mammoth Catalogue*, No. 16, just received, deserves mention as the best and most satisfactory example of a photographic price list we have seen in a year or more. It covers 274 pages of closely printed information, and is illustrated with more than a thousand half-tone and line engravings. The items listed comprise everything essential to the practice of professional and amateur photography, the section devoted to backgrounds being especially attractive. We recommend our readers to send 10 cents to R. J. GOLSEN, 74 Wabash Ave., Chicago, to cover the postage charges, and so obtain for themselves a catalogue of great value for reference purposes and general information.

WE are asked to publish the subjoined announcement:

"CAMERA CLUB, *New York:* By order of the Board of Trustees I am directed to notify the subscribers and advertisers that *Camera Notes* will be published quarterly, as heretofore, and at the same price—$3 per annum or $1 per number. The magazine will be edited and managed by Mr. J. C. ABEL, who succeeds Mr. STIEGLITZ. The form of *Camera Notes* and its previous high standard will be fully maintained. H. B. HART, Secretary."

ANOTHER excellent work received from CH. MENDEL is REYNER'S *L'Année Photographique*, 1901, a record of photographic progress similar to *Mosaics*, but without pictorial embellishments. French readers will enjoy this year-book. 320 pages, paper cover; 3 frs.

THE veteran JEX BARDWELL, of Detroit, sends us a capital likeness of himself, showing him in genial mood. We are glad to have this memento of a hard worker and good friend in photography. Mr. BARDWELL writes that he is now incapacitated from active service, but keeps tolerably cheerful.

A LIST of portraits of celebrities photographed by GEORGE G. ROCKWOOD, comes to our table from the new Rockwood Studio, at 39th Street and Broadway. The list covers famous authors, clergymen, physicians, artists, and famous men and women of the world. It comprises a noteworthy collection, and advertises in a striking manner the establishment from which it comes.

ONE of the best advertising booklets we have seen in some time is the dainty little handbook issued (in a limited edition) by the Curtiss Studio, New Haven, Conn. In its sixteen pages, 4¾ x 6 inches, the attractions and facilities of the Curtiss Studio are persuasively described by pictures and text. The booklet is printed on Japan paper, enclosed in an artistic rough brown cover. Every page evidences skill and careful preparation, and the little book should, and doubtless will, prove an admirable advertisement. We congratulate Mr. CURTISS upon his perfect taste and business acumen.

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PORTRAIT GROUP

By H. Brandseph, Stuttgart

From DAS ATELIER, Berlin

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WILSON'S PHOTOGRAPHIC MAGAZINE.

EDITED BY EDWARD L. WILSON.

VOL. XXXIX. SEPTEMBER, 1902. No. 549.

THE NATIONAL CONVENTION,

Buffalo, August 5 to 8, inclusive, 1902.

(OFFICIALLY REPORTED BY DOUGLAS A. BROWN.)

THE Twenty-second Annual Convention of the Photographers' Association of America was held at the City Convention Hall, Buffalo, N. Y., August 5th to 8th, inclusive, its deliberations being presided over by Mr. George M. Edmondson, of Cleveland, Ohio.

The following is the official stenographic report of the proceedings, complete in every detail:

FIRST DAY—MORNING SESSION.

The convention was called to order by President Edmondson at about 11 o'clock, it being found difficult to tear the members away from the inspection of the pictures in hall below.

Upon declaring the Convention open for the transaction of business, the following ex-presidents were invited by the President to occupy seats upon the stage, viz.: J. F. Ryder, Cleveland; G. Cramer, St. Louis; J. M. Appleton, New York; John S. Schneider, Columbus; J. Will Kellmer, Hazelton, Pa.

President Edmondson: Owing to the absence from the city of his Honor, Mayor Knight, we have with us his representative, and I now have the honor to introduce Councilman John J. Smith, of the Buffalo Council. (Applause.)

Address of Welcome by Hon. John J. Smith.

MR. PRESIDENT, LADIES, AND GENTLEMEN OF THE P. A. OF A:

Business engagements prevent his Honor, Mayor Knight, from attending the twenty-second Annual Convention of your Association, and he has requested me to appear before you and extend to you, one and all, a cordial welcome to the city of Buffalo.

In no other city in the United States can you secure photographs of such beautiful streets, handsome homes, and splendid parks, and we sincerely trust that you will take to your homes not only photographs of the points of interest, but mental pictures of the happy times that you are to enjoy in Buffalo. (Applause.)

The freedom of the city is yours, and we sincerely trust that you will not only enjoy yourselves while you remain our guests, but that you will also accomplish results which will be to the benefit of yourselves as well as others

I thank you very sincerely, ladies and gentlemen, for your kind attention, and again extend to you in behalf of the Mayor and the citizens of the whole city of Buffalo a cordial welcome. (Applause.)

President Edmondson: In behalf of the Photographers' Association of America, I thank you for this welcome, Mr. Smith.

The next business before us, gentlemen, will be the reading of communications by our Secretary, Mr. Reeves. The Secretary read the following:

ST. LOUIS, MO., August 5, 1902.

GEORGE M. EDMONDSON, President P. A. of A.,
City Convention Hall, Buffalo, N. Y.:

Regards to all the boys Sorry cannot be with you. Cast my vote for 'Frisco next convention.

F. W. GUERIN.

LOS ANGELES, CAL., August 4, 1902.

GEORGE M. EDMONDSON, President P. A. of A.,
City Convention Hall, Buffalo, N. Y.:

Sorry I am not with you this year. Success to all.

FRANK SCHUMACHER.

President Edmondson: The next item on the programme is reports of committees. As I understand there are no reports ready at this time, we will pass to the important address of the morning. I will not attempt to say anything in introducing our old friend who has graced our platform so many times in the past. I will simply announce Professor A. H. Griffith, of Detroit. (Applause.)

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Address by Professor A. H. Griffith.

MR PRESIDENT, LADIES, AND GENTLEMEN: It is always a pleasure to greet the photographers of America, and especially is this true of myself, because I have always received from them a most hearty welcome. It seems to me as if I knew every one of you personally, and if I do not speak to you and call you by name it is not because I forget you. I have just taken a hasty glance over the pictures down below, and tried to compare them in my mind's eye with those of six years ago. What a marvellous change! Six years ago there was a certain line of thought followed out; five years ago another line of thought; four years ago another line, and so it has come down. Sometimes you made all old men and women; then you made all Madonnas; then you made young women; then you made young men.

Now you can go into any city, into any walk of life, and find a model. Portraiture is the one thing that the photographer wants to work for, but he should take his subjects at their best. Do not think that you can become acquainted with them in five minutes: you cannot do it. There is a sort of mental telegraphy and instinct that enables you to select among a number one particular person as the capable one. I recently lost a young man who had been with me twelve years. I picked him out from a crowd. After his death I had more than one hundred verbal applications for his position and over forty by letter, and out of that one hundred and forty people there was just one that I wanted to consider. You say I am hard to please. I do not think so. Men who have worked for me say I get along with them splendidly. When I talked to one applicant five minutes I made up my mind he was not the man I wanted. Finally, when the young man came in that I did want, I looked at him and said: "Your teeth are too wide apart." He looked at me, and I said: "You are not judicious; you are not thoughtful; you act on impulse; you act on the spur of the moment; you are a splendid office man, a splendid fellow to work under somebody, and I will make a place for you; but I do not want you for my chief assistant."

I have got that young man yet. He has been with me eight months. He is a splendid office-boy, but I would no more think of going away and leaving the museum in his care than anything in the world. True, he is honest, but he will act on impulse. He does everything that way, which is all wrong.

Now, what I am saying may appear to you to be telling you my private affairs, but I do it to illustrate something else. While I was trying to find a suitable assistant, there came into the museum a young man whom I had never seen before. I followed him through the lines and thought to myself, "That is the boy I want." Presently I went up to him and talked to him a little while. I saw he was bright and intelligent. I said: "Do you live in Detroit?" He said, "No." Then my heart went down to my shoes. "Where do you live?" "I live twenty-five miles from here." "What do you do?" "I teach school." Well, I would have thought as much. He had it in him. I felt he had ability when I looked at him—those cold, steel-blue eyes, which said, "I know what I am doing. I have confidence in my ability. While I may go wrong, I will go right the next time." I saw character written all over the boy's lineaments and acts. After conversing with him about half an hour, I said: "Do you want to go into my employment in the museum?" He said he did not know anything about a museum. I said: "That is the very reason I want you. I want a boy that is capable and intelligent and willing to learn, and I think you are that boy." He said: "My term in school will not be out until December." I said: "I will wait for you. You stay there until December. Write me a letter when you return home. I want to see your writing." I wanted to read between the lines of his letter, so as to find out whether the young man was what I thought he was. In about ten days I got a letter, just such a letter as I expected to get, in which he said: "If you are still in the same humor, I will come to you in December." I wrote to him to come. To-day he is with me, a splendid type of that young manhood that America can produce—bright, intelligent, thoughtful, earnest, energetic, full of ambition, and yet held in. He will make an ideal museum man. I was attracted to him in somewhat the same way that a merchant is attracted to a customer to whom he feels that he can safely sell goods on credit. He does not tell him, "I will trust you," but he makes up his mind that he will do so. And he trusts that customer a little, and by and by more and more, because he feels that the man is all right. Yet you cannot always do that with every man who comes into your store until you learn to know him. And that is what the portrait painter must do. He must know his man. One of the best men we have in that line in Washington will receive a sitter, talk to him about religion, politics, the theatre, or what not until he finds out what the man is, what he is interested in. By and by he strikes the sympathetic chord; then he knows he has the man at his best, and he tells him: "I will be ready to paint you to-morrow," and to-morrow he commences. He has learned something about the man. Now, you people who are making photographs for two dollars per dozen, if a man or woman or child comes in you give them a two-dollar job and send them on their way happy. That is all right, but you will never become great photographers in that way. Genius is simply another word for hard work and study.

Yesterday a lady brought me a picture of her own composition. She has been a student at an art school for about seven years. The picture was beautifully drawn; the subject was well posed and the drapery fell in easy folds, and yet the picture was a failure. Why? The subject she had chosen represented the figure of a woman in dejection. The woman wore a magnificent dress and had thrown herself across a table, her face being hidden and her hands clinched. Now, the true artist would go farther than that. He looks at the little things. Would that woman have thrown herself across that table and clinched her hands simply on the table top? Never! In the depths of human sorrow and grief we cling to something. She would have held to the table, clung to something. A young boy's mother died a short time ago. I was his friend and he came to me. He never let go of my hand, because it was something tangible to hold fast to while he talked to me. I took him to my home and he slept with me that night. He got his arms around my neck. I thought he would choke me. He wanted something to hang to. It is the soul coming out of one; so I give you that as a lesson. A grief-stricken one would grasp something, cling to it, because the soul wants to hold fast to something that is tangible. Take the case of a little babe: hold out your finger and see how quickly it will grasp it—something to hang on to. The whole of life is made up of this something to hang to.

Now, it is just such study of human character and of human nature that you photographers must get hold of. Some of you have seen me go into a convention exhibit and pick up a picture, read it, tell you who the person is, what their business is, how they lived, whether they were rich or poor. And you have looked at me as though I was a mind-reader and fortune-teller. I am neither one nor the other. There are some people who go before the camera and there drop the mask that they wear in business or in society, and the camera, looking through the eyes and the face, catches the soul of the man or woman, so I know at once whether they are rich or poor; I know whether they have come up out of the fields; I know whether the home is one of luxury. It is stamped all over the picture, and I read it as plainly and as easily as I turn the leaves of a book. Then there are other men and women who are actors, and when they sit down before the camera they put on their actor face. You might as well look at a piece of putty; there would be quite as much expression in it. You cannot tell anything about them; you do not know whether they are vain or proud, whether they are rich or poor, whether they are mechanics or business men. You cannot tell, but you take up another one and you will see by the firmly-set lips that the old man, when he pushes a ten-cent piece across the counter, hangs on to it until the grocery man gets it safe into the drawer. That man sits in the last seat in the street-car so that he can keep the nickel that much longer. (Laughter.) You will see another fellow with a whole lot of wrinkles around here, and you know he often smiles, that he likes a good story and enjoys life. You want to get all that smile in the picture.

It was the great characteristic of Abraham Lincoln that he could always see the humorous side. He could relax his grip on the serious things of life, take a good laugh, and start over again. Whenever you see a good picture of Abraham Lincoln you will see that far-away look, as if he was trying to grasp the possibilities of things, trying to take a new hold of all the things that require his energies; yet for one moment he could let it all down and forget it, and be ready with a story and joke or a quip that he might have one moment of laughter, and then grasp hold of the problem. I followed Abraham Lincoln over every foot of ground away up to Salem, which is now only so many holes in the

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earth, down to Springfield, and again to Washington, over the battlefields that he won, and I learned a vast deal about Abraham Lincoln that never went into books, which made me reverence and respect the man more and more, because I felt that he was every inch a man.

A magazine sent me out to find out something about George Washington that had not already been written about him; so I went down to Alexandria and examined the old police records, and found that George Washington was arrested for fighting in the streets of Alexandria. Do you think that the father of our country went down in my estimation? Not so. I felt he was a man like myself, could get mad and raise the roof. He could feel a righteous indignation when patience ceased to be a virtue, and instead of falling he rose in my estimation, because he was a man like the rest of us.

You must make a study of character, you must know the people who sit before you. You say that all this takes time. Well, you heard me say that genius was only another name for work and study, and if your business is not worth studying and if it is not worth getting the best out of it, go out and saw wood, and let it alone. The other man will go ahead of you, and he ought to. If you are too lazy to grasp the immense possibilities that await you, then the other man will come and take them. It is the country photographer in the little town who has lots of time, you say. Well, but he has not the atmosphere. We have artists in Detroit. Our artists say we cannot paint in Detroit. There is nothing there to paint. They could not paint in Paradise, because there would be nothing there for them to paint, nothing that they could grasp hold of. Why, you can go up and down the streets of Detroit or Buffalo in the early morning when the rose tints are over everything, when the dew is on the grass, when the haze is as I saw it this morning over the Niagara River; you can go out at noonday, when the sun shines down and the shadows fall heavy under the trees; you can go out in the evening, when the sunset glories are flaunted across the sky, and as they recede to shadow bid all the world good-night, and find more beautiful pictures right at your hand than you can paint in forty lifetimes, if you have only the ability at your finger-tips. But you cannot do it if the power is not there. It is the same way in your studios. Every day somebody comes in that would make a picture—not a picture for two dollars, not a picture for five dollars or for ten dollars, but a picture that would live through all time, if you only have the artistic ability to catch that and to fix it, to hold it within your grasp, and put on paper what God has wrought; not the things that you see, because oftentimes your eyes are blind. People bring to me pictures of brick houses, but you cannot see the bricks in them; that is not what the eye takes in. You want to give a semblance of it, that's all, just a semblance. But I have talked past my twenty minutes, and I will conclude shortly. I have been kindly asked to talk again before this Convention is over, and hope at that time to tell you something that will be pleasing, something that will be instructive, something that you can carry home with you, something that will remain with you for all time; but this morning let me simply bring you greeting. I thank you for your attention.

President Edmondson: We would like to open the afternoon session promptly at 3 o'clock, and I trust all will be on hand, as we have an instructive programme, which I am sure none of you would like to miss.

President Edmondson then delivered his address, viz.:

Address by President Edmondson.

Since brevity is the soul of wit, I will be brief. Much can be said in little space, and in little space I will endeavor to say it. The primary duty of the presidential address should be to indicate what has been done and what ought to be done; to indicate it merely and no more, for the details should be left to the regular organization of the Association.

Photography is feeling the impulse of the progress of the times. Like all its sister sciences, its march is steadily onward. There probably has never been in the history of the world such an impelling forward movement in the arts, in the sciences, in invention, and especially in industry and trade, as has marked the past decade. Photography's banner is in the van and the future is fraught with interest. Photography has ceased to be a trade; it has become an art. So swiftly moving is the time in which we live that this revolution of standard may be said to be the triumph of the past year. There has been a common contribution to this elevation of calling. It cannot be called the work of one man or any score of men; it is a process of refinement to which thousands have contributed. A certain few names are on every tongue, but the credit is not to them, for their work is simply based upon the patient research and labor of thousands. They should have no mention in the impersonal presidential message. What a contrast is there between the crude and stilted photograph of even a few years ago and the artistic creation of to-day! In composition, in feeling, in depth, and in color some of the products of the camera have rivalled paintings. Credit for this advance should be bestowed upon the National and State Associations, upon the splendid work of the photographic magazines, and upon the earnest students in operating and dark-rooms.

So great has been the progress of our art, for such do I regard it, that your committee, appointed at the Detroit Convention, has been successful in its efforts to have photographs admitted to the Art Palace of the St. Louis World's Fair. Do not let us minimize the importance of this recognition of photography as an art by the World's Fair Commissioners. Such recognition is the first that has ever been accorded on American soil, and the second that has been accorded anywhere in the world. Photographs were admitted last year to the art exhibit at the International Exposition at Glasgow. It behooves us, therefore, as an association and as individuals to see to it that every possible advantage is taken of this recognition of the World's Fair Commissioners. Let us pledge ourselves now to assist in bringing together the finest exhibition of photographs that the world has ever seen. Let American photography be forever fixed upon the pedestal of art by the character of its display in St. Louis in 1904. Its advantages will be incalculable. It will give an impetus to the whole movement in photography. It will give photography definition and dignity in the history of American progress. I hold it to be one of the most important duties of the Convention assembled here to-day to see that its World's Fair organization is made as strong as it possibly can be. National, State, and local associations should co-operate to this end. A definite plan of action should be conceived by this Association to radiate throughout the State and local organizations, in order that the high tide of photography may be marked at St. Louis.

The State associations have responded nobly to our request that they be officially represented by exhibits at the National. The good will and the evident desire on the part of these associations to assist us in making the Convention successful prompts me to suggest a plan whereby the National and State associations might work together to their mutual advantage. My plan is this: Let the National Association hold its convention biennially; let the State associations hold their conventions biennially also, but in the alternate year. This method would effectually avoid any conflict in conventions. It would provide conventions each year, and it would make the National Convention doubly attractive, because it would permit every State association to be represented by exhibits in it. The National Convention would then, indeed, be a national exhibit. Cannot the State associations be induced to adopt the biennial plan? They would gain the wider advantage of a national display without interference with State plans.

The prosperous condition of our treasury suggests the idea that the Association might work a little along practical lines for the advancement of its art. We can well afford to publish six masterpieces of photographic art once or twice a year and furnish them to our members with such comment as may be necessary to show the trend of photographic development. It would keep the members fully in touch with what their associates were doing, and it would also inspire them to produce a bit of work that might be worthy of such circulation.

I deem it also advisable to suggest that it might be well if the Executive Committee were authorized to publish semi-annually a journal of photographic art in the interest of the Photographers' Association of America, containing prints, timely criticism, and information concerning the Convention. As the journal would reach every member of the Association, to whom it would be sent free, it would unquestionably have the support of the manufacturer for its advertising value, and would

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cost the Association no more than the present letter and circular work of the Executive Board. Gentlemen, I thank you.

At the conclusion of the President's address, which was listened to closely and received with applause, he introduced Colonel J. A. Ockerson, Director of the Liberal Arts Department of the World's Fair, St. Louis, whose appearance on the platform was the signal for a hearty ovation.

Colonel Ockerson. Mr. Chairman, Ladies and Gentlemen: I did not come here with the expectation of making a speech, but rather to meet the members of the Photographers' Association of America and greet them. I had some part in the conference that resulted in allowing the art of photography to be assigned place in the Fine Arts Department, and I am glad that I succeeded in doing that much for you. (Applause.) A little later, if I have opportunity, I would be pleased to say something more extended, but at this time am not prepared. I thank you. (Applause.)

No further business offering, the Convention took a recess until 3 P.M., President Edmondson again requesting all to be on hand promptly at that time.

AFTERNOON SESSION.

The Convention met pursuant to recess, President Edmondson in the chair.

After announcements by the Secretary in regard to the matter of railroad certificates, and an invitation from the Aristo Company to attend their demonstration at 9.30 A.M. in the Convention Hall on Wednesday, the President appointed the following as Nominating Committee to canvas and report nominations of officers for the ensuing year, viz.: Messrs. William Kellmer, John S. Schneider, W. A. Proctor, Alfred Holden, and E. Goldensky.

President Edmondson: If there is no new business to be considered, we will proceed with the programme. The next in order is a practical studio talk by a photographer-demonstrator, who will give us his views on the "little things" in the business that mean success. I have the pleasure of introducing Mr. C. H. Smith, of Rochester, New York, who will address you. (Applause.)

Address by Mr. C. H. Smith.

MR. PRESIDENT, LADIES AND GENTLEMEN: Why are we here to-day? Why have you come to this Convention? I presume there are some who have come for an outing and the pleasures they get away from home; others that have come from force of a habit they have formed to attend the Convention, and still others who wish to carry back new ideas to improve their business. It is to the latter class that I will talk; the others are welcome to listen. If I can advance any new ideas that will be of use to any of you, I will feel that I have done my share, at least. In my six years of going about the country as a demonstrator I have probably come in closer contact with studio people than you could yourselves do by attending all our Conventions for a lifetime. There are so many little things that a man can talk about, if he will pass over the big things that you can read about, that twenty minutes is hardly time to give you any kind of an idea of the little things, the whys of photography. It strikes me rather queer at times why a young man must go to a college and spend three years before he can practice dentistry, when, in my estimation, that subject is nowhere nearly so complicated as photography. But how did the majority of us learn what we know of photography? I presume all of you did the same as I did; hundreds are in the same boat. When you were a boy you got a position in a studio, helping to print. I know the first job I had was to carry two tons of coal up two flights of stairs. (Laughter.) Some day the boss goes away to a funeral; calls you down-stairs, and says, "Can you focus a camera and expose a plate?" Of course you answer, "Yes," for a boy who could not find that out when the boss was not around would not be much of a boy. Well, the boss goes away to the funeral and you make the exposure. He comes back and finds the head-rest shows, and he has to make the picture over again; but the next time you have an opportunity to make a picture which is a success, and when you have made a print from it take it home and show it to mother, and mother shows it to papa. Papa says you are a noble boy to learn the photographic business in three months. He gets eighty dollars together, buys a camera for you, and you are a photographer, and that is the way most of you have learned the business.

I am going to tell you a little something that occurred last fall. This is an actual fact. Some of the stories I tell may be a little stretched, but this is fact, where a skylight had curtains festooned as though they were going to celebrate the arrival of a new customer, decorated with little wads of cotton. I said, "What's that?" He said, "Those are curtains." "For what?" "Why," he said, "I suppose you always have to have curtains on a skylight." He was right, but he didn't know why. How many of you do know why? I remember myself when I was not very old in the business, when I had a sitter I used to let a curtain down here and put up one there, and turn their heads this way and that way, just for a big bluff—to let them think I knew what I was doing. (Laughter.) But after I got more skilful I wanted to find out the reason, for I knew there must be some reason in these things. Some men make photographs under skylights with absolutely no curtains. I believe to-day, since I have made more of a study of the why, that I could make just as good a picture down at the side of this building, with the sun in the proper place, as under a skylight. Possibly some of you remember the time when they didn't use curtains. I have been in studios where the conditions were something frightful. You could hardly appreciate a description of them, even if I had time to give it to you. I just want to talk to you of some little things in photography. You cannot be blamed for not knowing them, because none of us has ever seen a primer of photography. It is not necessary, in my estimation, to be a thorough chemist in order to understand something of chemistry; it is not necessary to be a thorough brush artist, as Professor Griffith would like to have us all, in order to make good every-day work that will bring in the dollar; and that is the work that tells, that is the work that the little photographer who is coming here to learn ought to be instructed in. It is simple. I know it is simple, because I have been forty years learning it, and am just beginning to find out how little I know about it. It is simple when you start in right. You cannot build a house without a foundation. If I had only had a primer, some printed matter, to give me the rudiments of photography in the beginning, the why of it, I would have been rejoiced, and would have been able to avoid some mistakes that the professional, and even amateurs, will make because they do not the why.

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Think of a photographer who is making pictures having trouble with Aristo paper, sending in a letter with a sample reprint to show the demonstrator, and wanting to know why his prints will not come out like that. The foreman wrote back, saying that perhaps there was something wrong with his acid, and that he didn't take proper care of it, and he had better try litmus paper. A week or so later another letter comes along, which says: "I put two bottles of litmus paper in my toning bath, and it didn't make a bit of difference." (Laughter.) Now, can you blame a man who buys litmus paper and uses it in that manner when there are no instructions given him except by the man from whom he learned the business? Can you blame the young ladies starting a little gallery away down South, who sent a letter in one morning praising the developer, and saying that their 5 x 7 plates came out fine last night, and they wished we would make them some developer for 4 x 5s, that they wanted to make a lot of little ones. I do not blame them really, because they don't know "why."

There is just one little question I took pains to ask during my last trip, and I was really amused to find how many good photographers it puzzled; that was something about the combination of our simple developers. I find people all over the country—a majority of them photographers—who say, "I have a developer that knocks out the manufacturers." Now, that is not good sense, in my estimation—that they can make a developer that will work better than that made by the manufacturer. I cannot see how they can do it, for they know nothing whatever about chemistry, know nothing about the composition of their developer. Many men may succeed in this way, but the man that knows the why and pays attention to the little things will make good work all the time. You cannot make pretty pictures of plain people, but you can make good everyday pictures of the kind that pay by giving attention to the little things. This question I asked many photographers. I didn't get a reply from them, or at least there were very few who could give me an intelligent answer. I learned years ago that pyro—I believe that is what he called it—was a reducer, and sulphite was a retarder, and carbonate was an accelerator, but had never been taught what accelerator, reducer, and retarder meant. The man that told me that looked wise, but I found that he did not know the why, and as long as we have no primer, no printed instructions except what one finds in the directions accompanying plates and paper, how are we to know the why, except by asking everybody that we come in contact with about the little things?* I do not want to go into a talk about chemistry, because I do not know much about it, but I would like to ask a question and see how many hold up their hands. What do they put sulphite and acid in a developer for? How many know? There is not a hand up except Papa Cramer. He raised his hand, and he is the man I learned from. (A voice: "You said that sulphite was a retarder!") No, I said I was taught that. I know better now. Papa Cramer has been teaching me. Some people say it is to make color in your negative; another man says it is to control the color. Indirectly that is correct, but as I understand it now it is neither one, technically speaking, but is to prevent from making the color. Of course, your books will tell you all about those things, but I believe it takes a philosopher to make a good photographer. I think the fisherman who sat on the bank of the river one day and saw a calf's tail sticking through a knot-hole in a tannery fence across the river, and immediately dropped his fish-hook and line and sat there in a brown study, wondering how that calf got through that knot-hole, would never have made a photographer. If we are not philosophers enough to figure out a few little things, we will never make a success of photography.

Out of twenty-six studios I visited on one trip I found fourteen were developing in lights that would befog a plate in forty seconds. That is carelessness. I have a dark-room at home in which I can see the second hand on my watch and the very label on the bottom, but it is positively light-proof, non-actinic. I have been in studios where they had the window covered with tissue paper and a hole just big enough to see an indication of light. The man didn't know any better. I undertook to fix it for him and could not find any yellow paper in town, but I finally found some that worked. These are the little things in photography which go to make your business a success. Then we see studios with dilapidated show-cases. Some of you go home and see how your show-case looks, and I will guarantee you will be ashamed of it. You cannot expect to do business in that manner.

Now, perhaps you are dissatisfied with your business and want a change. I met a gentleman this morning the first thing when I came to the hotel, who said: "How are you, Smith?" I said, "How is business?"—something I always ask. He replied, "It is not very good. I have been doing all the business in our little town for a good many years." That is true. He has a nice, comfortable studio, does nice, clean work, and I think he owns his own store; but he says he is not quite satisfied, and would like to push out into a city where there is more trade. He has got the most of the business in the town, is comfortably situated, has money enough to come to the Convention, as he comes every year, but he wants a change, wants to do a larger business, to do a quality of work which he does not know how to do that would attract attention in a big town; but he feels as though he could. The next man I came to was a city man, who said he was sick and disgusted with his big town. He said: "There is so much opposition I cannot do anything. They are all making a cut price, while I am making good work and cannot cut in price, and I am going to locate in a little country town." Why be dissatisfied with photography? How foolish! It is the happiest business on earth. The number of amateurs taking it up proves this. I have been hard at work all day. Come and look at my fingers; they are all stained with pyro, and still after I get home to-night I am going to do the day's developing work, because it is fun—nothing but fun to make pictures. I would like to have you, when you go home and get your journals, pick out these little things and pay some attention to them; and if you find a negative that is over-intense or thin, find out why, experiment a little bit. Don't be stingy; spend thirty-five dollars, fifty, or maybe a hundred dollars to come to the Convention, and have some one tell you something and have a good time, and yet you begrudge six plates to make six good experiments, following the instructions of any of the dry-plate makers as strictly as an amateur would and as though you knew nothing about the business. If you will do that, paying strict attention to the little things, I will guarantee you will improve your work.

President Edmondson: I think we must acknowledge that there is a great deal of truth in Mr. Smith's remarks.

The next business before the meeting will be an address from one by whom, as many of the members of the Association will remember, we were last year entertained and instructed; an artist to whom we are again to have the pleasure to-day of listening. He will talk to us on "Practical Composition of One, Two, and Three Figures."

I have the pleasure of introducing Mr. Lucius W. Hitchcock, of Buffalo, who will now address you. (Applause.)

Practical Composition of One, Two, and Three Figures.

(*Illustrated by Lantern Slides.*)

It is the skilful variation of sound that changes a monotonous note into music. And in picture-making it is the proper variation of space, line, color, and light and dark that makes a beautiful picture.

Now it is the reputation of artists that they are different from other people. They are themselves variations of the human species. They wear things a little to

* This and similar statements in Mr. Smith's address, referring to the alleged lack of published information concerning photographic manipulation, is quite incomprehensible. There has never been any lack of reliable books on the practice of photography since Daguerre first published his process in 1839.—[Ed. W. P. M.]

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one side, as it were, and it is just this happy-go-lucky unconventionalism that we want to discover. However, you must not at once jump at the conclusion that it is merely something odd that is required.

There is a definite law that governs these oddities, so to speak, and if one simply started out to be bizarre without understanding the reasons why and the broad principle that governs them, it is easy to see that he would be groping in the dark, and lucky if he ever hit the mark.

You must recognize in the start that art is something more than the mere copying of nature. Art must always come from nature, but through a personality. Art must be more than nature by being less. This seems like a paradox. However, Millet and Previs de Chavannes are great for what they know how to leave out. An artist sees less than is in nature when the sacrifice would make the important thing tell the more. So, in this we have a very important variation, the variation of the power of seeing. You must remember that your means of expression, the camera, is simply a machine. It will make the wart on my lady's nose as clear and sharp as her beautiful eyes. It has no conscience, no feeling, no sympathy. There is no variation in the camera's eye; it sees everything equally well, and as a consequence the interest is distributed all over the picture, and there is no special interest anywhere. This scheme of variation is born of nature itself, and is very broad, but I will first take up the variation of space as applied to arrange a portrait. How can we apply variation of any kind to a simple bust? First of all, by the spaces. I mean by that the different spaces between the subject and the boundaries of the picture. No part must be left entirely empty, and, on the other hand, all parts must be equally filled. Get as great a variation in these areas as you can. It is obvious that if you place your sitter squarely in the centre, you will have no variation, as all the spaces will be equal, but just how the sitter is to be placed within its borders is too subtle a matter for which to give a recipe, so much depending on the light conditions, subject, etc.; all I can say is that the spaces should be pleasantly raised. The amount of space around a picture should have some relevancy to the size of the subject. When Van Dyke or Valasquez painted a child, the subject was always low in the picture, giving a sense of the littleness of his subject. (The lecturer here exhibited Slide No. 2.)

The little infant by Velasquez illustrates this point. This principle will apply equally well to full length, a group of several, when with skill and care one can carry this scheme of variation to much greater length. (The lecturer here exhibited Slides Nos. 3, 4, 5, 6.)

The first consideration should be in regard to the spaces between the heads themselves. Do not leave them all equally distant. Vary the planes as much as possible, and avoid placing them in even rows.

If you wish to make one figure more important than the others, give it a little more space—not square in the centre, but a little to one side.

The whole should be arrranged so as to get a pleasing variation in all the spaces, not only between the figures themselves, but with relation to the boundary as well. In the ordinary portrait groups all the figures are posed along in two rows, like pickets on a fence. All the faces are in full light, and an equal or nearly equal space between each one. Of course, they are stiff. I can think of nothing to liken this composition to except the arrangement of the rag babies one throws at at the county fair, "three balls for a nickel," easily to be accomplished.

Now I know that in everyday work the photographer will encounter as many obstacles as a painter in making people understand what is good. I can hear a howl coming from the professional photographer, saying: "You can't do it," etc. I know as well as you do that when a bride comes into your studio with all her bridesmaids, the picture will be voted a failure if every face is not equally clear. Mary Smith must be as much in full light as Jennie Jones, yet they can be made very beautiful pictures. I say you can do it. You cannot sell the best thing that ever was made to some people, but now there are people of taste everywhere, and at the rate you are going, it will not be long before you cannot sell anything that is not good. Some patrons will never appreciate a fine thing, but just as soon as it becomes the fashion they will want it. (The lecturer here exhibited Slide No. 7.)

Now we shall consider more particularly the variation of line as we find it in the human figure, accepting this as the basic principle. Later on we shall show how these same principles, variation of mass and line, are utilized in the composition of game subjects. But before I can speak of this I will take up the line in a single figure, on the ground that if we understand a part thoroughly we shall be able to put the whole together more intelligently. Then we shall discover how this principle of line is carried out in a good picture, and how it plays the all-important part in its composition. (The lecturer here exhibited Slide No. 7.)

A glance at this superb figure of Michael Angelo will bear out my statement. The limitations of this paper will not permit me to go into the detail that I should otherwise like to, but composition could be taught by a careful study of the human figure. Not only are all the principles of line beauty to be found, but the keynote in the variation of masses as well. I feel it very important to have one thoroughly understand the beauty of a figure, and to be able, by knowing in what its beauty consists, to choose a pose that will bring out all its charms. (The lecturer here exhibited Slide No. 8.)

Unless he can do this well it is sheer folly for him to attempt composition, for the beautiful lines of the figures are the very essence of good composition, and when we come to make arrangements of more than one figure the lines of all must flow as gracefully as parts of a single figure do. The group must have that sense of rhythm that characterizes the graceful lines of the body. (The lecturer here exhibited Slide No. 9.)

Before we get into too technical a discussion, I should like to speak about the more subtle qualities of a portrait, plain and simple. First of all, the best quality of any portrait is natural, unaffected ease, graceful repose. It is the subtle line that charms in the successful composition of a portrait. Don't think it is necessary to tie your sitter in a bow-knot to get the composition curve I have been speaking about. In general the best pose does not look like a pose. It is this subtle difference that distinguishes the great actor, whose consummate art seems the most natural thing in the world, notwithstanding every movement had been studied beforehand, from the cheap actor, who makes it quite apparent that he is acting every minute of the time. I once said to Sir Henry Irving that the best actors seemed to act the least. "So they do," he said; "they cover it up, hide it." So in the successful portrait one must first have this sort of dramatic quality in it. Though you pose it, it must not look the part, but seem the most natural thing in the world. So much for a general requirement. Second, it must be so proportioned to the space it occupies that one's first impression is correct. If the person is large or small, one should get the impression instantly. Third, it should be so placed within the picture boundary that we get the most decorative variety of spaces; and, last, the accessories should be so placed as to fill the space that needs filling to tell a story or carry out or beautify a line.

We will now take up the qualities of line, space, and accessories, and see how they can be used in the composition of a full-length figure.

I know of no better way to make these principles clear than by going over in a careful way this single figure of No. 10, by Alexander. It is rather eccentric, but a very clever and decorative bit of composition. In regard to spacing, notice how the interest is kept in the upper part of the picture. The spaces are smaller and of accented interest that give a pleasant contrast with the simple restfulness of the lower part, filled only with the long flowing lines of the skirt.

We notice at once that the figure is pushed to one side, even at the sacrifice of the back of the skirt. However, this is quite justifiable, as the beautiful line of the figure is in no way impaired, and in making the picture narrower we have a panel shape, which in this case gives a more decorative effect. If you took the skirt in on the back, you would have to add more in front to keep the head from appearing unbalanced or too much to one side. (The lecturer here exhibited Slides Nos. 11, 12, 13.)

Now let us speak of more than one figure in an arrangement, and see how the same principles hold good. This picture, by Sargent, seems to be very hard to beat. First, consider its general spacing. You will notice that the heads are quite extreme in the space variation, as the children's heads overlap one another, and the mother's head is quite two diameters away.

The placing of the cabinet and panelling in the upper right-hand corner is just enough and not too much to fill this otherwise empty space, and at the same time does not detract from the heads the most important points of interest. The spacing of this group is thoroughly good and interesting, but its great charm is in the exquisite line that leads the eye from the foreground

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back to the little girl's head in the middle distance. This compound curve is so self-evident that it is scarcely necessary to speak of it, but I cannot refrain from mentioning the beautiful rhythm the artful painter established between the three figures. The reason why Sargent placed the girl's head so near the boy's was on account of the line. This head, with its accent of dark hair and ribbon coming where it does, carries the eye up a little and into the picture, making the curve far richer. If these heads had been separated by even a small space, this would not have been so—the line would have lost some of its charm; though the spacing might have been equally distant between the mother and the boy, the composition would have been utterly ruined. The open book breaks the lower transverse line of the sofa, throws it back, and gives all the chance in the world to the long graceful lines of the dress. The fan in the mother's hand completes the lovely curve over the extended shoulders and up the arm. The eye is drawn over and upward to the boy, and in and upward to the girl. The eye must be led in the path of a curve as it is drawn to the main point of interest, or from one point of interest to another.

In placing two figures together under the best conditions, accessories will be found useful to fill out and beautify the line, but sometimes they are indispensable. It often happens that you will have one figure running abruptly into another at right angles. Then it becomes necessary to so manipulate your accessories as to soften this abrubtness. For example, I show my painting of Atala. (The lecturer here exhibited Slide No. 14.)

We have two figures in a rectangular space. The dead woman stretched on a rough couch, with the Indian trappings, suggested a flat picture, so this shape was decided upon. I want to call your attention to the way the accessories were manipulated to weave a curved line into the arrangement of the horizontal figure, and the other perpendicular one crossing it at right angles. Atala tells the story of an Indian brave who mourns for his dead mistress. First of all, his position must express grief. To do this I felt that I must bow my figure down. (Make a point of this in your notes. You must express a mental action by a physical one. It is a very vital quality in any given subject, and something for which even correct arrangement otherwise will not entirely recompense.) I carried his arms forward with clasped hands, for a double purpose. First, it continued the line of his back, deflecting it and bringing it down into the centre of the picture, where it belongs. The clenched fingers denote the disturbed condition of his mind, without which it might seem as if he was sleeping. The figure is at once graceful and dramatic, and the face being softened and almost lost in the shadow makes his suffering more of a mystery. The posing of the Indian was comparatively easy, but I had no end of trouble to get the lines of the dead woman to flow gracefully into it. She was dead; no turning or twisting of the body would be consistent with the story, consequently it could not be thought of. I had a perfectly straight line running into a curve, and the task was to place the accessories around this figure so that the abruptness would be softened and the lines of the woman's figure flow rhythmically into the already graceful lines of the Indian. First I deflected the lines of the drapery both ways, raising the hand and arm up against the hip. This started pleasant lines diagonally across the body that seemed in harmony with the curve of the Indian's back, but the line across the top of the woman's drapery still came very abruptly into the curve of the other figure. I worked with this little matter a long time, and finally hit upon the use of flowers. They look carelessly thrown down, but the placing of these four flowers and their detached petals took more time than any other part of the picture. This was the key to the composition; it was the connecting point of the dominant lines of one figure with those of the other, and this break in the curve between the end of the woman's arm and the top of the Indian's shoulder was distressing. The flowers with their varied spacing filled out and completed this beautiful curve. Remember, the smallest things count. Look after the little details as well as the masses; but, on the other hand, do not use too many figures. Simplicity is a sterling virtue in a picture. If possible, accomplish your results with just enough accessories to tell the story. (The lecturer here exhibited Slides Nos. 15, 16 17, 18, 19, 20.)

I want to give you a suggestion for composing two figures outdoors, as seen in this "By the River," by Serolle. (The lecturer here exhibited Slide No. 21.)

We have perspective lines vanishing in two directions. The lines of perspective in the group of figures in the foreground lead to the right. The perspective of the river in the plane beyond leads to the left in the opposite direction, and the lines of the distant hills lead back again to the right. It is quite clear that the eye in following the different planes of perspective describes a well-defined zigzag across the picture. First, from the bending figure to the mother's figure, who is beyond her to the right. From here the perspective of the river draws the eye entirely across the picture to the large tree and group of cows. The hills in the background lead off into the distance. It is now quite clear that the picture is constructed on such lines of perspective as would lend themselves to the making of a beautiful compound curve, providing the accessories or groups themselves could be so arranged as to turn the corners gracefully. In other words, our attention must not be allowed to run off the picture. The groups with their accessories should be so manipulated that the eye is carried on into the picture by the lines of the second plane of perspective where it was dropped by the first, thus always keeping the interest in the picture. If you will follow this picture closely, I think I can make plain the masterly way in which it was accomplished. The picture being a panel shape, the line should naturally sweep up as it advances through the picture. It will be noticed that the first figure is bent under her load, bringing her head lower than the mother's, just the reverse of where the perspective, had she been upright, would have placed it. In this way the larger figure is made to lead up to the smaller one. The child and mother do the trick of turning the first corner and diverting the interest back into the picture. The child's head and back, posed as they are, start the curve in the other direction, which is carried across the picture by the bold line of the river bank.

The group of figures is admirably balanced by the large tree at the left. It will be noticed that the eye is being carried up all the time; but now, of course, in the opposite direction. The group of cows on the extreme left serves exactly the same purpose the baby does on the right. This groups and softens the otherwise abrubtness of the great tree, at the same time introducing an additional point of interest.

More important than these, however, this group prevents the long straight line of the distant shore from running directly out of the picture by blotting it out at the critical place. The lower branches of the big tree soften the top of the distant hill, and those two straight lines are either blotted out or softened. So the second angle is carefully rounded, and the eye runs off into the perspective of the hills in the opposite direction, nearly across the picture again, where the sky takes it up and runs back into the picture from the right, so that the most distant point seems to be the narrow streak of light just over the bluff in the centre of the picture. (The lecturer here exhibited Slide No. 22.)

I will now retrace my steps and speak of lighting in relation to half-length portraits. Lighting is, perhaps, the most important feature of composition, and when properly manipulated will make even a bad arrangement interesting.

The secret of the whole matter is variation. The same principles we applied to space and line will hold good in regard to light. By subduing the light on unimportant things, and allowing full strength on the accents, we get harmony and subordination. In this way some things will be shrouded in mystery, and your pictures will be far more suggestive than they would be if everything was out in full light.

In painting one is forced to suggest things by the mere technical impossibility of painting all the detail in nature. Millet said he could suggest what he could not paint to save his neck, but in his masterly suggestion lies the greatness of his art.

Now your position is quite the opposite. With the camera you can reproduce anything. But your great difficulty is being able to only suggest and avoid the brutal realism of a photographic lens. The suggestive element, or, in other words, that something in a picture that appeals to the imagination, is the characteristic feature of any great piece of music, literature, or painting, and if the photograph is to climb into the field of art and be something more than a mere mechanical performance, it must do the same thing. Wagner's operas appeal directly to our imagination, consequently they are ever new, and we enjoy them more every time we hear them His various themes are unfolded to us, not all at once, but as we grow into them, and each time we discover new beauties. It is largely the same with a fine picture. If every detail is equally important, everything clear cut and in full light, we soon tire

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of it, because we soon see all there is to see, and after that it is always the same.

On the other hand, if we can induce an element of mystery into our picture it gives our imagination a chance, and what we do see clearly is made more beautiful by the sacrifice of something else not as important. It is a psychological fact that we are much more fascinated by a mystery of any kind than by a plain fact; and this is just as true of a picture as it is of the headlines of a morning paper.

These qualities can be had in light as well as in dark pictures. Don't think that a picture has to be in a fog or as black as ink to be artistic. This is one of the greatest mistakes in the world. You must remember that it is the effect of light that makes the things beautiful without a light effect. Not as the term is used in the country "gallery," sometimes called a Rembrandt effect, but a light effect which pervades the whole picture. One must feel that subtle glow through the entire arrangement, even though the picture be very low in tone. A pitch-black background is never transparent. You never look into it as you should, but the murky stuff seems to be as opaque as a tar wall clinging to the things in the foreground, and does not go back at all.

The first duty of a background is to go back. It should be luminous and atmospheric, even though it may be dark.

When lighting a bust or half-length portrait we will take for granted that your spacing and lines have been well looked after, but the chances are that there are several lines you would be only too glad to get rid of, things that are unavoidable, and your light is your best triumph you have been saving to take care of this very trick. With it you can control the entire arrangement, subdue your disagreeable lines, and bring out others; you can lead the eye wherever you choose; the beautiful line can be accented at its most important point, and sacrificed where it ceases to be useful. On the other hand, so powerful an influence over an arrangement can do a great deal of mischief. The most beautiful arrangement can be utterly spoiled by bad lighting. I cannot overestimate the importance of lighting. Aside from its technical relation to a composition which is great, it plays the all-important part in the sentiment of a picture. You are depending upon your lighting for all the quality and feeling put into your work. Properly handled it will do much to elevate your work above the mere copying of nature and into the realm of art, which you will understand is something more. (The lecturer here exhibited Slide No. 23.)

In this photograph, by Rose Clark and Elizabeth Flint Wade, there is no attempt to be freaky. It is straightforward, and the usual result is simple, dignified, and thoroughly good.

It seems to me that this treatment is a happy compromise between a freak photographer who mutilates and fusses with his prints to get plastic qualities until they are neither sketch or photograph, and the ordinary commercial photograph where it is simply a question of getting it all in. In these pictures the interest has been centred upon the fact by the simple device of throwing the rest of the picture in shadow; and the values are so cleverly treated that we feel the mellow glow of light through the background. In this study the dress and hair are a decided note darker than the general tone, thus giving luminosity to the background.

Remember as soon as you make a thing dead black it becomes local color, and is not transparent. I should now like to say a word about lighter arrangements—I mean where the picture is flooded with light—and show how the interest may be as simply centred on the important place by the careful use of black.

It will be seen that in a dark picture the eye will follow the light spots; but in a light picture the eye is naturally led to the dark spots. This sort of treatment is called "spotting." Of course, a dark spot in a light picture is sure to command attention, providing you don't have too many competitive spots. In this, as in everything else, simplicity is the best rule. A good strong accent of this sort in a picture will be very effective if you are careful to keep the rest of the arrangement simple or unaccented; in other words, if you have other darks in the arrangement, be sure to keep them less important than the one you have to command the attention. Otherwise the interest will be sprinkled all over the picture, the several spots vieing with one another to command the attention, with the result that the interest is settled on none.

It very often happens that a light picture will only need a single spot, and the composition will be much better if this note is not repeated anywhere in the arrangement. Some photographers have struggled for this effect by sketching on their plates, with, what seems to me, indifferent sucess. But the idea is all right. In some portraits I have seen treated in this way the effect would have been very pleasing had the photographer only known how to sketch. However, it seems to me that some very clever things might be done in this way. For instance, in imitation of some of Holbein's drawings, the man who does the sketching must surely have the training of an artist. However, this freak treatment is not necessary, for a portrait can be made very effective when treated with a single strong spot for the accent. (The lecturer here exhibited Slide No. 24.)

As an example, this portrait by Boldun. The dark, rich note made by the cloak is not repeated in any other part of the arrangement, thus more effectively centring the interest on the head, where it belongs. Though the picture is flooded with light, the color is a note considably lighter than the general tone, and serves to give color to the dark of the cloak. Fancy dark shadows or black spots in the lower part of the picture—a dark dress, for instance, or black shadows under the arms—and the effect would have been gone. (The lecturer here exhibited Slides Nos. 25 and 26.)

However, spotting is not always so simple. In more elaborate arrangements other spots or notes will be needed to fill spaces as well as to balance the more important ones. In such an arrangement care should be used not to get the subordinate spots, as I shall call them, too dark, and to pay such attention to the spacing that the whole effect shall be decorative. When the atmospheric conditions will allow it, these spots should be kept a little lighter or smaller, so as not to interfere with the force of the more important accent. Of course, these spots are used to vary the spaces and carry out the beautiful line in connection with the figures and their various accessories. The point I wish to make clear is simply this: Don't repeat the dark accents in a light picture if you want that accent to keep its effectiveness.

Nowhere can this sort of spot treatment be studied to better advantage than among the modern illustrators. They work continually in black and white, as does the photographer, and, not having color to help out in locating the accent where they wish, they make use of this sort of treatment.

If you will give yourself the trouble to look over several numbers of *Harper's*, *Century*, or *Scribner's Magazine*, you will discover that the illustrators are very chary of their pure black; but when they do use it it is very effective.

Don't abuse your black in a light picture, or your light in a dark picture; they are the extremes of your palette and the controlling notes of your arrangements. An indiscriminate use of either makes it simply a question of getting it all in; they should be saved up as the last trump, and then played on the right spot. (The lecturer here exhibited Slides Nos. 27, 28, 29, and 30, as well as 31.)

At the conclusion of Professor Hitchcock's address, the Convention adjourned until 9.30 A.M., Thursday, August 7th.

SECOND DAY—MORNING SESSION.

Wednesday, August 6th, was set apart as Manufacturers' and Dealers' Day, in order that the members might have time to inspect the exhibits, etc., no sessions being held on that day. Some account of these exhibits will be found on other pages.

THIRD DAY—MORNING SESSION.

The Convention was called to order about 10 o'clock A.M. by President Edmondson, who announced that the first business would be reading of communications.

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The Secretary read the following:

BUFFALO, N. Y., August 4, 1902.
MR. GEORGE M. EDMONDSON, President P. A. of A.
DEAR SIR: I wish to say that the gallery will be open for the inspection of your members at all times from 9 o'clock in the morning until 5 o'clock in the afternoon, during the entire week, and I trust that as many of your members as can avail themselves of this opportunity will do so.
I trust that you will appreciate our kind feelings toward the Association.
Very respectfully yours,
Buffalo Fine Arts Academy,
T. GUILFORD SMITH,
President.

TACOMA, WASH., August 5, 1902.
GEORGE M. EDMONDSON, P. A. of A.,
City Genesee Hotel, Buffalo.
Regret inability to be with you; best wishes for success.
A. L. JACKSON,
President P. A. of Pacific Northwest.

EUREKA PACIFIC MINING CAMP, IDAHO,
July 25, 1902.
MR. GEORGE M. EDMONDSON, President P. A. of A.
MY DEAR SIR: Snow-capped mountains, forest streams, with thin finny tribes, juicy venison, fine air, and spring water do not prevent me from wishing I might enjoy your delightful meeting. Success to you all.
A. L. BOWERSOX.

Secretary Reeves presented the following concise statement embracing the vital facts of his report and that of Treasurer Barrows, heretofore published, viz.:

Report of Secretary.

Received for space and advertising	$2274 50
Paid to the Treasurer	2274 50
Bills receivable	330 00

Report of Treasurer.

Cash on hand January 1, 1901	$3106 78
Received from membership and dues	2170 00
Received from Secretary	2274 50
Received from S. L. Stein, balance on Entertainment Fund of 1900	147 10
Received from sale of ladies' buttons	48 00
Total	$7746 38
Disbursed by voucher	3366 84
Leaving on hand January 1, 1902	$4379 54

President Edmondson: You have heard the reports of the Secretary and Treasurer. Shall they be adopted?

Mr. Hewitt: I move that the reports of the Secretary and Treasurer, as read, be adopted. (Carried.)

President Edmondson: Under the head of new business, which is next in order, I have asked Mr. H. A. Collings to say a few words about Mr. J. F. Ryder's new book, which is now in course of publication, a book that will be of interest to the fraternity at large. I ask Mr. Collings to kindly come forward and tell the members about it.

MR. H. A. COLLINGS: Brothers—I can truly call you brothers because in this Convention as well as in the conventions we have had in the past there is a fraternal feeling existing. And it is a feeling that we can well be proud of. It is a feeling that makes all members of the Association feel at home. The object and purpose of coming to the Association to look at a few pictures, even without any enjoyment connected with it, is money well spent. Yet, money that the majority of us cannot afford to spend for that purpose alone; but, when we take into consideration the fact that we are having an enjoyable time, a pleasant vacation, seeing sights, and meeting people, and which we will look back to in the future, we feel well repaid for the effort and money expended.

I will speak to you for just one moment in connection with this work. I am doing this with the kindest feelings to a member of this Association; perhaps one of the oldest members that we have. Twenty-one years ago I went to the city of New York, and I remember putting up at the Sturtevant House, and calling the proprietor down—the clerk would not do—to see what time they locked up, because I wanted to go out and see the electric lights, and did not want to get locked out! (Laughter.) At that time I met the Past President of the Association, Mr. J. F. Ryder, of Cleveland, one who has stuck close to the Association and who has done as much, if not more, for the photographic profession in the last twenty years than any other one man. To-day he is publishing a book that is worthy of publication in my friend Mr. Todd's magazine, *The Photo Beacon*. Remember that I am not here to advance my own interests, but to speak for this book, because if you have it once in your home you will never regret it. It is my wish—not only my wish, but the wish of the Executive Board—that all members of the Association present subscribe for this book, because it is well worth the $2.50 that is asked for it, and I would request that each one of you make yourselves a special committee to see not only your friends that are here, and other members of the Association that are not in the room now, but also to see your competitors at your homes. It sounds funny to speak of competitors, but it is getting so that we do not shoot our competitors in the back as much as we used to, and I am glad of it. So I ask you to see your competitors in your own towns and tell them about this book of Mr. Ryder's, who was the first President of the Association, and who is now here within hearing of my voice. He has attended all the meetings in the last twenty years, and his book should have a boom and sell everywhere. I hope he will have your consideration, and that you will purchase the book. (Applause.)

President Edmondson: We all feel justly proud of the victory of our committee at St. Louis, and Colonel Ockerson, the chief of the Liberal Arts Department of the World's Fair, of that city, has kindly volunteered to give you a few details pertaining to that Exposition, especially with regard to photography. (Applause.)

Address by Col. J. A. Ockerson.

LADIES AND GENTLEMEN OF THE P. A. OF A.: You are probably all more or less familiar with the fact that the centennial anniversary of the acquisition of that vast empire west of the Mississippi River, known as Louisiana Territory, will be celebrated in St. Louis in 1904 by a universal exposition embracing exhibits from every field of human endeavor, both at home and abroad. It will illustrate to the fullest practicable extent the developments of the century in art, science and the industries.

This exposition is international in its scope; it covers the whole wide world. Europe and the Orient, the South American, Central American, and other more distant countries have promised such elaborate displays as have never before been attempted.

The great magnitude of the exposition may be shown in several ways.

The available cash for construction, preparation of grounds, and the general building up of the exposition proper amounts to $15,000,000; this, exclusive of the

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$1,380,000 for Government building and exhibits, a million dollars for the Missouri State building and exhibits, and amounts ranging from $250,000 down, by the several other States and our insular possessions.

Japan has signified her intention of investing $1,250,000 in her exhibits, and other foreign countries will do equally well, or better.

So much for the investment, told in the briefest and most general terms.

There will be fifteen great exposition palaces aside from the numerous State and foreign buildings.

The exhibits in these buildings will all be on the main floor, and none will be consigned to galleries, which at best are difficult of access and otherwise objectionable. Even with these eliminated, the total floor space will exceed that of the Columbian Exposition, and the St. Louis grounds will cover double the area of that exposition.

Four of the greater buildings are well under way, and work on three others has begun.

The contract has just been let for the Liberal Arts palace, to cost $475,000. The Fine Arts Palace, the main portion of which will be a permanent structure, has been contracted for at something over a million dollars.

What may be termed the commercial side of photography will find an attractive home in the Liberal Arts Palace, amid congenial surroundings filled with displays of the graphic arts, music, the drama, architecture, etc.

Special provisions have been made for the display in the Palace of Art of carefully selected examples of artistic photography which may satisfactorily pass the critical inspection of the National Jury of Selection of the Department of Art.

In all departments of the exposition we are looking to quality rather than quantity, and our aim throughout will be to gather only the highest and best.

To this laudable end we confidently look for the hearty support of the Photographers' Association of America, which we hope to greet in St. Louis in 1904.

I can pledge to you from my department every possible courtesy and assistance.

Ladies and gentlemen, I thank you. (Applause.)

President Edmondson: I think we can assure Colonel Ockerson that this Association will unquestionably endorse some plan whereby the photographers of America will be fully represented at St. Louis.

I think it will be in order now to extend a vote of thanks to Colonel Ockerson for presenting himself at our meeting and giving us the valuable information which he has.

Mr. N. L. Stone: I move a vote of thanks to Colonel Ockerson.

The motion was seconded and carried by unanimous vote.

President Edmondson: Under the head of new business we are now ready to transact anything that may come before the meeting.

Mr. H. F. Lifshey: I desire to present a resolution and move its adoption, and would ask if the Chair would read it.

President Edmondson thereupon read the following, viz.:

Preamble and resolution presented to the Photographers' Association of America, in twenty-second annual convention assembled.

WHEREAS, There exists a widespread and growing opinion among the members of this Association that a material benefit, financial and otherwise, would result from the publication of a journal by this Association, devoted to the interests of the Photographers' Association of America and its members; and

WHEREAS, Many of its members stand ready to pledge their fullest support to such a publication, it is therefore

Resolved, That the President be and hereby is requested to appoint a committee of not less than five to confer upon the advisability and feasibility of such a plan, and report to this Convention before its final adjournment.

The motion to adopt the foregoing was seconded by Mr. H. L. Klein, of Milwaukee, Wis.

President Edmondson: It is moved and seconded that the resolution be adopted. We are ready to hear remarks from members as to their opinions in the matter.

Mr. Hayes: Is the question now simply on the appointment of a committee or is it on the adoption of the proposed scheme?

President Edmondson: The question is on the appointment of a committee as recommended in the resolution. The matter to be referred to the committee and reported upon at a future session.

Mr. Stone: The motion providing for the appointment of the committee does not commit this Association to the plan, but only leaves it to the committee to take into consideration.

President Edmondson: It simply leaves it to the committee to report before our final adjournment, and then to be acted upon. The question is on the adoption of the resolution. Are you ready for the question?

The question was now called, and, being put by the chair, carried.

President Edmondson: If there is no other business before the Association we will proceed with the programme.

In selecting a photographer for the next subject, "Good Business Methods for Photographers," we selected one who is not only successful as a photographer, but has been eminently successful as a business man. He is a veteran of the Association, and one of our past presidents.

I have pleasure in announcing Mr. C. M. Hayes, of Detroit. (Applause.)

Good Business Methods for Photographers.

GENTLEMEN OF THE PHOTOGRAPHERS' ASSOCIATION OF AMERICA:

The subject which President Edmondson assigned me, "Good Business Methods in Photography," I feel some diffidence in trying to elucidate. So much so that I feel it better for me to simply tramp over the ground

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learned by a long acquaintance with successful photographers and a careful study of their methods, and make my ground surer and perhaps be of more solid instruction to younger photographers and those of less experience than myself. What I have to say is from a purely business standpoint.

We might consider it from two standpoints, but remember that my theme is "Good Business Methods;" and it is only with the business end that I shall deal. I shall say nothing of the higher ideals that actuate the soulful artist or move the art-steeped and imbued member. We have but one way to look at the view that the world takes of us. The great world has but one way of expressing its approval, and that through the only standard of value it knows, the standard of the dollar. It neither coins the gasps of sentiment nor the throbs of emotion in money value, but stamps its approval by the dollar mark. That is the test of good business, the only stamp and coinage of universal approval the world gives. With the heart-burnings of the disappointed idealist the term business has nothing to do. Business bears as close a relation to ideality as the grimy, stolid engine-driver to the time-wasting, slothful dreamer. Bear in mind that art ideals are left for the more learned and more talented to talk to you about.

For convenience' sake we will classify the three grades of photographers. While there are many exceptions to these classifications that are successful, yet the field, I think you will agree with me, is very thoroughly covered in these three—namely, the factory owner, the impressionist, and the photographer.

The factory owner is a loud-voiced advertising gentleman who toots his business horn indiscriminately and at all times. He is a man of reduced prices, club rates, and everything that is clubable, sells tickets, always gives away something, makes groups of ministers, grocers, albums of secret societies, college and school work. Invites theatrical and professional people and everybody else that there is a chance of getting an order for a dozen pictures on speculation. Help is hired for the amount of work and not the kind of work that it can do. He is systematic, keen and sharp. As a rule, he does no operating himself, but devotes his time to shrewd advertising, close buying and the careful superintending of his workmen, so that he is enabled to produce pictures at a rate which sells them, anyway. Not a new style of picture, but a new scheme, coupled with a thousand older ones, helps to keep this gentleman alive. He makes money, and legitimately so. Of course, I do not mean by this, the leech or barnacle that attaches itself to the profession and lives by the gullibility of the stock dealer and the boarding-house keeper, but a man who looks at photography not as an art but as a business proposition, pure and simple.

The factory owner does not have a long business life, as factory owners are born every day, and the new one has the lessons, the failures, and successes of the older ones always before him to profit by and improve upon. Of this type the public, and even the individual himself, very soon tires. There is ever that same lack of an endeavor to excel in the better part, the same dead level of mediocrity and monotony, and too often the very thinly-disguised presence of simply grasping greed that reaches ever for quantity and not for quality. The always whirling grindstone of commercialism sharpens the features, but it wears and destroys the finer sensibilities. Even the most progressive devotee of this type grows tired of the dead level to which he invariably sinks, and he finally gives up and drifts or steers to some other business where the monetary returns are greater, the promises more rich, in view if not in fulfilment, and the demands of higher class less insistent.

Directly opposite to him is the impressionist. This gentleman is intriguing. While the ultimate business end is attained, yet the results are arrived at by a road as directly opposite to the factory owner as is the rising from the setting of the sun. Photographs, dozens, and prices are words that are entirely absent from his vocabulary. Money sends a chill (I might, in a low tone of voice, say thrill) through him. Trade eccentricities and mannerisms are the principal part of his make-up. He never gets down to taking photographs with the lens, but he creates portraits. He never likes or dislikes a photograph. It either appeals to him or it lacks soul. He is never making reductions, but is always "tucking it on" and telling of it.

He never gives away anything but an art lecture with every order. His studied familiarity with noted artists, this glibness with art terms, at once impresses the lay mind with a marked similarity between the impressionist's creations and those of the noted artists of the brush and pencil. The wife of the newly-rich president of the water trust, after she has obtained a sitting with him, which is done only through a great deal of formality with which he surrounds himself, knows that she has obtained something which the wife of her husband's clerk cannot get, and she is doubly sure of it when the bill comes in. Now, the impressionist has made money, and legitimately, too. His clientele demand mannerisms, dramatic art, formality, and mysteriousness. He furnishes them.

The chances are that the wife of the water trust president would not go to the factory owner, and if she did, would take the cheapest picture he made, and then grumble about the price of an extra negative. She has the highest respect for the impressionist, and he has made money out of her. Is it not a legitimate transaction?

The impressionist by the very nature of things is a narrow man; he is full of crochets, and his very manner gives his patrons and friends the idea of affectation. Such characteristics do not wear well, and soon become tiresome to all. He lacks the sauviter-in-modo of the factory owner. His life of popularity, if such it can be called, is even more brief and uncertain than that of his brother first mentioned. It is because his lack is the greater of the two.

The *photographer* belongs to a little broader class of men. He sees beyond his own individuality far enough to know that the whole personnel of the fraternity at large helps to make or mar his own standing in the community in which he lives. Like old dog Tray, he sometimes finds himself a victim of fellowship. I believe that the Photographers' Association of America and its tributaries the State Associations and their influences have done more to elevate photographers in their business standing than anything else in the past quarter of a century. I do not wish to infer that there were not good, responsible men in the business twenty-five years ago; but I do contend that photographers, as a class, are more highly respected and in better standing in the community than they were at that period.

The day of the fly-by-night and the irresponsible never-pay-for-anything is fast going, if not already past: that class has been weeded out, and better pictures are being made. The broad-gauge gentleman whom I wish to typify as the photographer is the man who does not travel the beaten path and who does not crystallize. He thinks for himself, and yet is wise enough to realize that the thoughts of others are to be utilized for what they are worth; the man who sees that the microscopic definition is no longer desired or desirable in a good photograph portrait. He sees that spotted photographs and all sameness in posing and styles wear him out of favor and weary him of his own labor. He realizes that each individual who selects him as his photographer and pays him the price demanded, must have the best of attention and requires an individuality about the work which will bring out the individuality of the subject. He knows that if he exhibits, and feels a natural pride in his profession as a photographer—and the name of his product as photographs—that he has not laid himself or his profession open to criticism in being trivial or undignified.

Such is the photographer, and he is different from the two other classes. In a word, the factory owner and the impressionist resemble a man trying to run a locomotive on one of the rails of a railroad track where both rails are essential. The photographer, combining the merit of commercialism and the pride of art, has both rails upon which to clearly run his train of progress. Seeing the mistakes of commission of the factory owner and the errors of omission of the impressionist, he can and will avoid alike the Scylla of the one and the Charybdis of the other, and, by seizing the best points of each and improving on them, he adds profit to his business, and standing to his profession. He is out of the rut, foot-free, and always advancing along the lines of the best thought. New patrons join the old, and he, too, succeeds legitimately.

These are three distinct classes of photographers which I have typified, and any one of them may be successful. I do not pretend to say which is the best. As I have observed only through my own eyes, and compared them by the narrow confines of my experiences, I do not believe that I will be considered presumptuous (when the years I have spent in the work and the acquaintanceship which I have formed is considered) if I take the liberty of classifying thus our successful portrait photography. If there are any points herein which the younger and inexperienced members have not known I am more than pleased with my effort. Much more could be said of the non-mysterious working of these craftsmen and as to the artistic value of

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their product, but that I shall leave to some more talented member to explain.

Two unalterable principles we must adhere to, namely: that all advertising and all sharp scheming are but temporary in success unless backed by solid, clean, artistic work, systematically handled, with prices graded to the amount of work done. Photography more and more is partaking of the individuality of the photographer, and in consequence he must store his faculties and not abuse them by being over-anxious for quantities of work. When he reaches the point where his labors are becoming too arduous, his prices should increase, and keep increasing until that point is reached where he can go to his labors with that bright mentality which comes from rested physical health. Then the thought, the power, and all that is best in him artistically are bound to appear, and, with that appearance in his work, comes the approbation and applause of the public, as shown by their patronage and their money. A tired, hurried mind never produced anything but mediocrity or worse.

I have to thank Mr. Edmondson for the twenty minutes he assigned me.

President Edmondson: We will now call on "Papa Cramer," who has something good to say to the Association.

Papa Cramer: I am very glad, in fact I am "so happy" (laughter), I cannot help but spring that on you, because now is our chance to be happy, and you ought to use every chance in your life to be happy. That is the great key to your success and your satisfaction. I am sure I am so happy. I have such a good audience here for the National Convention. It should be our aim to uphold our national meeting. I am sorry to see so many of our leading photographers absent, those who have made their reputation by attending these meetings here, and gaining knowledge from the information of others. They should try to return what they have received, and their staying away, I think, is totally wrong. With all due respect for the State associations and the success of their meetings, this is the mother association of them all. This is the only chance we have to meet all our friends once in the year.

I have listened with great satisfaction to the proposition of our President to make an arrangement to have State and national meetings alternately; that is, to have the State meetings in one year and the national meeting the next. I think that is an idea worthy of adoption, and I hope that at no distant day you will take it up.

Now, while so much has been done to elevate you for the higher art, the artistic part of our profession, we must not forget that photography is not only an artistic, but also a mechanical profession. It is my duty to especially look to the mechanical part, the chemical side of it, and strive to reach the utmost perfection in that regard. That is the solid ground upon which you are to build your artistic superstructure. You must not forget that it takes good work to produce a good picture, unless you go entirely into the fake line, where anything is allowed. The true artistic picture must be perfect in all respects. You do not want to run after new experiments, and meanwhile sacrifice fine detail in the work, simply for an effect which is called art. Really, it is not art. A picture ought to show the finest gradation, as well in the light as in the shadows. To obtain this, you must pay strict attention to the mechanical part of your work. (Mr. Cramer then gave in detail a number of very valuable hints on negative making. As these are set forth much more fully and in much more technical detail in Cramer's *Manual on Negative Making*, which has just been issued, and which was distributed to the members of the Convention, it is thought unnecessary to print these details here. Those interested can find them fully set out in the above *Manual*.—Ed. W. P. M.)

I thank you for your attention. I will give anyone who requests it a copy of the *Manual*, which I have had in preparation for the past six months, and which I trust you will find of interest and value.

President Edmondson: I will take this moment to announce the following gentlemen who will compose the committee appointed in pursuance of the resolution adopted this morning: C. M. Hayes, Detroit; John S. Schneider, Columbus; J. M. Appleton, New York; C. W. Hearn, Boston, Mass.; and S. A. Lifshey, Brooklyn.

Pending the arrival of the next speaker on the programme, and while the tracings he will use are being placed upon the wall, which will occupy a little time, I am going to ask Professor Griffith to talk to us. (Applause.)

Address by Professor A. H. Griffith.

MR. PRESIDENT, LADIES AND GENTLEMEN: I came up this morning with the idea of sitting in back here and listening to the other people talk. I assure you it is just as much pleasure to be a good listener as it is to be good at anything else, and sometimes one gets a great deal of good out of listening to other people. You can steal a good deal of thunder from them sometimes. I wish

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that I could go down stairs with each one of you into the Exhibition hall; go around and talk with you of the various pictures that impress me, so that each one might get something of their individual character. This, however, is an impossibility. I am always glad to talk to anyone on such matters who wishes me to. I only wish the day was forty-eight hours long. You say I get tired; not at all, it is a pleasure; and besides that, I get a great deal more out of it than you do. I wake up my own thoughts, my own ideas, and when I see a picture that impresses me I carry that away. It claims me.

In former years in going through the exhibition there have been six, eight, ten or twelve persons whose work was away above everybody else's. You could go around and pick them out easily. Everybody was studying their work. This year it is not so. There is a more even uniformity of work to my eye than I have ever found in any exhibition before. There are good things in all the different groups. Some, of course, are better than others. I found a group down there out of which I wanted to pick one figure and walk away with it. You talk about balancing the space. I wonder how many people understand what is meant by balancing the space. I talked with a gentleman yesterday, and he said "I don't understand this balancing of space." You say a thing is good, but the figure is all over to one side, simply because it is not balanced in space. There is an equality of space that allows your eye to rest, and another equal space which gives your eye something that is interesting. There is in this a subtle something which it is hard to explain. Now and again you must break up your dead space, or otherwise it becomes monotonous.

Some of the pictures down below are fuzzy. I am not saying that they are made of wool, but I am saying that they are fuzzy. They simply worry you with the amount and mass of detail.

Now, when you write a letter you read it over, or at least you ought to. I don't always do it, not every time, but if you read it over the next morning, you will wonder that you ever wrote it. You will want to cross out a great many of the lines. It is the same way with a picture. If there is anything in that picture that you want to cut out, cut it out, that is, just that much that you do not need. It is just that much paper or canvas thrown away. Get rid of it; cut it away. There are a number of pictures down there that need trimming. You feel that the man was too lavish with his paper, afraid to use his scissors; afraid to take a slice off the body. You think "why don't he cut down that woman's back or man's back; cut it away." Some people say, "I can't do anything like that, I haven't any matts like that; I haven't any paper like that; I don't know where he gets this surface, this tone, and those qualities." Why don't you say, "I haven't the ability, I haven't the brain, I haven't the genius"?

I am afraid that I will get to talking and keep you too long. (A voice: "Go ahead.") Now, it is not the inanimate things, it is the animation and the genius that are behind the palette knife and behind the brush. It is that which assorts the pigments and lays them on, and makes them so that they mean something. Now, your camera is only a brush, only a machine, and as I have often stated to you, if there is genius behind the brush, it is that which will make it do the work every time. Another thing which I spoke of some years ago; I don't know that I have referred to it since, but I will now. You people make your figures too squatty. You think that you don't do it, that your camera does it. You notice the first lady or gentleman whom you see coming down a stairway, and you will observe that when they get within about three steps of the bottom, what grandeur is there; they are elevated. You photographers all look down on your people. That is the great trouble I find with 50 per cent. of the pictures; you make your figures squatty; they do not get the elevation. The homeliest man in this whole room will never realize how good-looking he is until he lies back in a barber's chair and looks in the glass. (Laughter.) I tell you that is the place to find out what noble features you have, to get your pug nose straightened out. You lose this narrowness which gets into your life.

Now, as I believe I have told you before, in the matter of vanity we are very slightly removed from the savage. We claim a great deal of civilization, and we say that we have got beyond all those things. But where is the man who doesn't wear a watch and chain in his vest or rings on his fingers? He may tell you he don't want them; but if he does there is always a good reason for it. I tell you, my friends, we are just a little bit vain. Why not come in with a smile on your face, come in before the camera and sit down and be taken just as God made you? That is good enough for anybody. And then don't go to work with a retoucher's pencil and iron it all out, take all the character and soul out of it, and pass it over as a china image of somebody that never was. There is the nose, the mouth, the pudgy cheeks, and if you hit it with a hammer it would break! I thank you. (Applause.)

President Edmondson: We have important business now to consider in the selection of the next place of meeting for this Convention. Nominations are in order.

Mr. Holden: I beg leave to nominate Indianapolis as the Convention city for 1903. (Applause.)

Mr. Holloway: I second the motion. I have a telegram here which I would like to read, and would ask you to pay attention to: "To the Photographers' Association of America, Buffalo, N. Y. All photographers of this State, as also ourselves, promise hearty support to success of next meeting if Indianapolis is selected as the next meeting place. (Signed.) H. Lieber Company."

In regard to that I wish to say that while a great many of you have never visited the State of Indiana, a great many of you have. We feel as though Indianapolis can take care of this Convention or the next Convention, for the one sufficient reason that the photographers of the State of Indiana hold together. They are on the very best of terms, and every one of them will promise you hearty welcome. They will be glad to see you. There is no coldness among Indiana photographers. (Applause.)

President Edmondson: Indianapolis is nominated.

Remarks of Mr. Carl E. Ackerman.

And now listen to a few words of welcome and good fellowship from California—California, the land of sunshine, fruit, and flowers, and San Francisco, the city of more than seven hills, on the Pacific. California wants you, each and every one of you. Her people want you, because they know that when you come back from that State you will go forth and tell the thousands that you meet in your every-day business the glories of our own, our native State of California. The photographers of that State want you; they want you because they never had the opportunity to entertain any meeting of this assembly. Last year they invited you; I personally came before you, and in behalf of the State and for its benefit told you to come.

Now I am going to ask you to listen to a few words, not from myself alone, but from the whole State of California. (Mr. Ackerman then read letters from the following, viz.: E. E. Schmitz, Mayor; J. A. Filcher, Secretary and General Manager California State Board of Trade; Frank J. Symmes, President, and M. L. King, Secretary, Merchants' Association; George Almar Newhall, President, and E. Scott, Secretary, the Chamber of Commerce, San Francisco; H. A. French, General

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Manager Sacramento Chamber of Commerce; Ben L. Brundage, Secretary Board of Trade, Bakersfield, California; W. S. Green, President Sacramento Valley Development Association, Colusa, California; F. Q. Storey, President Los Angeles Chamber of Commerce; P. W. Powers, Acting Mayor, Los Angeles; W. P. Steinbeck, President, Stockton (Cal.) Chamber of Commerce.)

Gentlemen, from the letters which I have now read you can see that it is not alone the city of San Francisco that is asking you to come, but the whole State of California. (The reading of the letters was received with immense applause, and it was quite apparent that many in the audience were highly delighted with the alluring prospect held forth by Mr. Ackerman and the cordial expressions contained in the letters.) I would like to know how many people here would like to go to California. Every one that would like to go there, hold up your right hand. (A large number of hands were raised.) Pretty near all of you. Now, I am going to tell you how to go. (A voice: "Tell them to make it unanimous.") It is the same thing as unanimous. I want to tell you about the business end of it before I sit down. We have figured this thing out. The principal objection has been, of course, the expense incident to a trip to California, and the time that it takes to go there. Now, there remains in the minds of a great many people in the East this illusion. They think that because ten years ago it took ten days to go to California from the far East that it takes that time now. Well, it does not; it takes four days from the farthest point East to the farthest point West. It takes three days from Chicago or St. Louis. In making that trip we have figured out your actual expense for a trip lasting three weeks, and I am going to read you the items: Your fare from Chicago and return, $50.00; sleeper from Chicago and return $28.00; meals on the train, both ways, $12.00; two weeks' board and lodging, first-class hotel, three dollars a day, $42.00; incidentals, $18.00; total, $150.00. Mind you, that is everything first-class—hotel, Pullman sleeper, and accommodations and everything, on the very fastest trains. Now, you may want to cut that down some. The railroads now run across the continent what they term tourists' cars, that are just as good in every way as regular Pullman cars. By using them you can cut your expenses down to $20.00 on that item. Then in San Francisco we have got in all our suburbs, accommodations for thousands of people, rooms averaging in price $5.00 a week. You needn't stop at a hotel. Our restaurants are famed all over the land. They are cheaper than anywhere in this whole broad country, and better by far.

Now, I think I have said enough as to the accommodations. Now as to rates: Rates are being made for some of the most prominent conventions that have ever assembled in the United States. Preparations are to-day going on for the convention of the Knights of Pythias in San Francisco, where 40,000 are expected. We have just passed through a convention of the Shriners, and they have declared it was more liberally attended and a more successful convention than has ever been held by that organization.

Gentlemen, California wants you! We want you to come!

Mr. Hollinger: That sounds like business! Those people mean it. This fellow has bothered me for two years; and I am not the only one that he has bothered. He has been bothering all of us. I would like to go to San Francisco myself. I am willing to go; in fact I would like to go to San Francisco, because when I come here I do not have the same chance of meeting fellows and talking to them that I do on the train. On the train we all have a good time together, and after we have taken such a trip we don't often forget one another. We can have the jolliest time we have ever had, going clear through from here to San Francisco and back. What a jolly time that would be! You might have to save a few extra dollars. I think I could get my wife to watch the corners a little bit on me and the girl, and we could manage it some way to go through to California and back We have been wanting to go there a long time. Some of the rest of you have, too. There is not much of a chance for us to go unless we all go together. I want to see all you photographers once a year if I can; but my! I would like to go to San Francisco once in my life. If I can do it but once it will be a great time for me, and I know we will all enjoy it. Now, let's think about this (applause), and let us go and visit these people, and have it off our minds, for he has bothered us a long time. We never had anybody come before us with such letters and such talk as that man has given us. He has some more. He has got all the people downstairs that have got stock here to sell. I know he has that paper in his pocket ready to spring some other time—yes, sir, I tell you we have got to go there, and let us settle it now to go to California for a week next year, and how happy we will be. (Applause.)

Mr. Appleton: You will notice by my badge (referring to his Indianapolis badge) that I am committed to Indianapolis. (A voice: "Louder!" "Take it off!" and laughter.) I was committed to this through and through, and I never like to go back on a friend; but there are some things connected with this affair that reach further than the coming year. The year 1904 has been set for the Convention at St. Louis at the time of the big fair there, and we all know that a photographers' convention under the shadow of a show like what will be at St. Louis always falls flat. We had that experience at the Centennial; we have had that experience at Chicago; and I am afraid that the Assso-ciation will suffer in 1904, and suffer very seriously, on account of the show there. Last year there was a show in this part of the country and in this city. We held our Convention in Detroit, and the show was held here, and both were successes. Those who went to the Convention and felt like coming to the Pan-American did so, and did it in one trip.

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Now, I would suggest that the Indianapolis convention be put off till the year 1904 (applause), which brings it close enough to St. Louis that both things can be done at one time, and done right, and we will give our Californians a chance to show their broad, liberal spirit, and their hearty welcome which they propose to give us.

Mr. Holden: I have listened very carefully to the remarks of the previous speakers, and I feel that we are all, if we take up with these ideas at the present time, looking at something which is a very, very beautiful vision at this time. The organization is to-day prosperous. I believe we have a grand future, but that future has to be made by a majority of the members, and it has to be made by the little fellow as well as the big. I am not one bit bigger or one bit smaller than any man, but yet at the same time there are times when I feel that influences and conditions surround me which will not permit me to partake in many things which I should like to have. I have long sought an opportunity to go to California.

Mr. Ackerman: Now is your chance.

Mr. Holden: The chance may offer, but I cannot see it next year, and I know that there are numbers of men in this hall to-day, who, while they might applaud the scheme, feel, as the year rolls around, and the day comes near, the lack of something that we must all possess—namely, the money to pay the expenses. It is beautiful when you compute those things, to show all the expenses, but you must all remember that there are other connections, and we have to make those connections. We have our business to consider. Many of us are the individual head and the individual worker in our establishments; consequently, in considering this we must remember this one fact that there are many worthy and good fellows here who cannot produce the money sufficient to pay that expense. Let us look calmly at this questiou.

Mr. Ackerman: May I ask the gentleman a question?

Mr. Holden: I don't mean for one instant to lower the standing of the photographer, but I certainly do feel for the fellow who is on the same level as myself in regard to finances. It is for him that I make this plea; it is for this Association; it is to increase the membership of this Association; and if you go to California you will lessen rather than make the number greater, and, as I made the nomination for Indianapolis, and asked for Indianapolis next year, I ask every man to come up to the front, and, when the vote is called, to vote solid for Indianapolis next year. (Applause).

Mr. Schervee: I have myself been very anxious to go to California for a good many years, and I intended to second the nomination of California as a man from the East, but when I saw my good old friend Hollinger get up, I said to myself, "I can say nothing." I would travel miles and miles to be in company with such a man as Hollinger, a man as full of spirits as he is. (Applause.) And if we will make up a large company from the East to attend a convention in the far West, it will show that we are not selfish, as the Western people have reason to think that we are. California has never had the Convention. We have had it here time and time again. Isn't it due the Western people that we show due consideration to them? I think that it is. (Applause). Speaking of the expenses, I don't think there would be very much difference between Indianapolis and California. (Laughter). A very little. I have heard it stated by people who had been to California that they are the greatest entertainers in this country, and I am very anxious to get there. I am very anxious to be associated with all of you from here to go West next year. There is a friend of mine who lives out in California who has been to our Conventions for years and years. He is absent this year, but he is present in spirit. A letter was read in the Convention from him. I refer to Mr. Schumacher. No doubt the Western people have cause of complaint that they are able to come East and we are not able to go West; but I dare say there are a good many people out West that are as poor as we are, and who feel just as we do, and they would like to have the Convention once in a great while. But I believe the nomination of California has not been seconded, and I most heartily second California for the Convention in 1903. (Applause).

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Mr. Holloway: Mr. President and Members—The remarks of the gentlemen who are in favor of going to California have made me almost want to go there. I tell you it is nice; but I believe we ought to get right down to facts, and lay aside the alluring features, and consider our own conditions, not what we would like, but what we think we can do. In the first place, most of the photographers that I know are like myself. Nearly everyone of you has a wife, and she wants to go. If you go yourself to California that means your wife and family. You cannot help but take them along, or otherwise you would be rightly judged as selfish.

Mr. Ackerman: We want your wives and daughters—we want all of them.

Mr. Holloway: I do not believe most of the photographers present can afford to take that trip. Again, I think it would be foolish for them to go there, for they know in their own hearts they can't reach the place. Then again, we must consider the National Association and its finances. (A voice: "It is rich.") If we conclude to go to San Francisco that means that our Executive Board will have to make one preliminary trip there, which will involve an expense of between $1200 and $1500 to the National Association.

Mr. H. S. Klein: We have $4000.

Mr. Holloway: You must remember that when they make that trip they are not getting rich. I don't believe that after the next Convention, if it is held in California, that you will have a cent in the Treasury.

Mr. Klein: All right, let them start again.

Mr. Holloway: For that reason I believe that Indianapolis is the most central location, and that the masses can reach it. Do not understand me to say I do not want to go to California; I would be delighted to go, but we cannot reach it. (Applause.)

Mr. Klein: As a Western man I wish to say that I have not any more money than any one here, but when I get home I am going to start to work to save up something for the next Convention, because I do not care if it takes me to the end of the earth, it is worth it every time, every cent that you pay. It instructs you and does you good. You need a vacation. If you are 365 days in the year in your reception-room and in your posing-room, you want to get out, you want a vacation; it does not make any difference to me where I go on a vacation, it costs money. Now then, suppose we go to Indianapolis, that would cost $75 or $100, as this here cost me. I might as well save up $150 as $100. If you try to do a thing you will win. (A voice: "That's right.") If there is a railroad to take me I am going to the Convention wherever it is. I shall certainly try to take my family, too.

I have spent here as much as I ever did at a convention, but yesterday I was at the Falls of Niagara, and that one day has repaid me for my outlay; and I want every one of you here to feel the same way. Do not mind the expense of going to California, because you will never regret it. I want to try to see the Executive Committee and get them to arrange that we may all meet in Chicago on a given date, so that one train may take us through to California; and when I get there and you get there we will never regret the cost. It will always be a pleasing recollection. (Applause.)

President Edmondson: The Secretary has some communications to read.

Secretary Reeves: Before the various places are discussed as to their merits, it is perhaps well to read several other communications that we have.

The Secretary read letters of invitation from Mr. T. W. Raoul, President, and William F. Randolph, Secretary, Asheville Board of Trade; Hon. Julius Fleischmann, Mayor of Cincinnati, and O. H. L. Wernicke, President, and E. P. Wilson, Secretary of the Cincinnati League; T. W. McCreary, Manager Hotel Victory, Put-in-Bay, Ohio.

MR. H. A. COLLINGS: Probably a great many will vote to go to California who never will go there. The gentleman says he saved a hundred dollars last year, and will save a hundred and fifty this year in hope that we may go farther. I want to save more than that next year; I want to have something laid up for something other than an excursion to California and an umbrella; the umbrella might give out! In the first place, we want a Convention; we as photographers want to meet together; and we want incidentally to view the scenery; but we also want to lay up a dollar rather than spend everything that we can scrape for a little enjoyment for ourselves, leaving our wives at home. The question is, What place shall we go to where we can have a Convention worth while? will it be a place where we will have to take three weeks of

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PORTRAIT

By Klein & Guttenstein, Milwaukee

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that the Photographers' Association of New England will hold their annual convention on August 20th, 21st, and 22d, in the city of Boston. We are going to have a great convention, and the officers of this Association and the exhibitors here have kindly consented to send us some of their work. In addition, we have pictures from all over Europe, which unfortunately did not arrive here in time to be hung in the national display, but which will be given place there. We have also work from the best amateur and professional photographers. We extend to you a hearty invitation to come to see us, and we will give you a good programme and a good time. (Applause.)

President-elect Nussbaumer now made announcement of the excursion to Niagara Falls and down the Gorge Route, which had been planned for the afternoon. He stated in detail the train schedule, route, etc., and added that the P. A. of A. button would be a free passport for everything.

On motion of Second Vice-President-elect Giffin, the Convention adjourned, to meet in Indianapolis in 1903.

WHY IS ADVERTISING OFTEN UNPRODUCTIVE?

BY W. I. SCANDLIN.

ONE of the chief difficulties to be met with in preparing advertising copy for any business is to be found in the fact that the person preparing the matter, unless specially trained along advertising lines, is unable to view the situation from more than one standpoint, and that standpoint, in too many cases, is not the one from which it is viewed by the person under whose eyes the advertising is to come.

The average merchant or photographer who prepares his own matter for his local newspaper or an occasional circular spends a great deal of thought and labor over the framing of a write-up which, after it is finished, fails to excite the desired interest among its recipients and to produce the results expected.

The value of the goods advertised may be well written up, their many advantages set forth in excellent language, the type well displayed, and the job properly printed, and yet the whole effort may fall flat and be productive of no appreciable results.

The reason for this it may be difficult to determine in all cases, but in a vast majority of instances it is easily traceable to the fact that the advertisement "talks shop" too much, that the goods advertised are exploited in the same general terms that would be used by a good salesman talking to his customer over the counter, and that the main purpose of the announcement has been overreached by the ill-advised eagerness of the advertiser *to sell his goods before getting his customer within reach.*

The real object of advertising announcements, either sent through the mail or published in the columns of the daily paper, should be to stimulate interest and excite curiosity in the mind of the reader. An announcement should, like art, leave something to the imagination. The cold statement that such and such goods "are the best of their kind, may be had at a given price, should be in possession of every reader of this advertisement," etc., etc., is not enough, no matter how many changes may be rung upon it. The successful advertisement must carry with it something more than this, and that something must be of such a nature as to leave an open question in the mind of the reader —a question that can only be solved by a personal examination or investigation into the quality of the goods themselves.

It is the exciting of such an interest and the opening up of such questions in the minds of the prospective customer that makes an advertisement draw. It leaves the matter "up to him," and the ordinary reader is much more apt to remember a phrase or sentence which carries something of interest unsolved than an announcement, no matter how fully written, that tells the whole story. In the latter case "the incident is closed," and the whole matter is banished from the mind, whereas,

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in the former, everything that suggests the subject-matter of the open-question advertisement brings to mind at once a remembrance of something interesting and attractive, and instantly establishes an involuntary connection with the advertiser.

Thus it is that a distinct advantage results wherever it is possible to write the copy for a projected advertisement from a "middle ground," viewing the subject-matter not only from the position of the man who has a certain article to sell, but also from the standpoint of the expected customer, whose purse-strings, it is hoped, may be loosened by the drawing power of the finished announcement, whatever it may be. This "middle ground" is a difficult one for the average photographer to find, however, and it would be strange if it were otherwise.

If the advertiser will keep in mind, however, in preparing his write-ups the thought that he is, first of all, endeavoring to excite an interest in his products, he will gain a good start. If, then, his advertising is properly presented, he will be made aware of it by a manifestation on the part of the community before which it is placed. This is all that can reasonably be expected of advertising, and after the interest has been excited its mission has been fulfilled, and the salesman must "do the rest." Its mission is not to take the place of a salesman in the store or reception-room assistant in the studio.

Advertising, properly prepared and presented, pays, and if money is expended for advertising from which the proper returns are not received, it should be taken for granted at once that there is a good and sufficient reason for it. When this point is reached, the wise business man will start an investigation, and locate the trouble. If he finds the fault, as he most likely will, to be in the framing of his advertisements or in the manner of their presentation to the public, there are two ways open to him for improvement. One of them is in the appropriation, from his real business, of a considerable amount of time, vexatious thought, and arduous labor along more or less unfamiliar lines, in order that he may reconstruct and improve his work; the other is in the placing of his entire advertising business in the hands of those, of whom there are many, who have made a study of it, and who can view it from "the middle ground."

That this latter course is becoming more a general custom is apparent to any one who keeps in touch with current advertising in all branches of business; and that it is a rational, reasonable method to follow is clear when one notes how almost every field of business is being specialized at the present time.

CONVENTION AND EXHIBITION OF THE PHOTOGRAPHERS' ASSOCIATION OF NEW ENGLAND.

WITH the closing of the Convention and Exhibition of the Photographers' Association of New England, held in Copley Hall, Boston, August 20th, 21st, and 22d, there passed into the history of photography what was in some respects one of the most remarkable collections of art in photography yet seen in America. A splendid organization was inaugurated at the very commencement of the work of the Executive Board for this year, which by united and harmonious action resulted in financial and artistic results from the very start. On January 17, 1902, there was shipped to the Society of Artistic Photography, Moscow, Russia, by Charles W. Hearn, the President of the Photographers' Association of New England, a collection of selected photographs from their salon of 1901, comprising pictures made by many of the leaders of photography throughout New England. This complimentary exhibit, sent thousands of miles, called forth hearty thanks and a response from Russia in a return exhibit which was on exhibition at the recent Convention.

In addition to the New England pictures sent to Moscow hundreds of letters in French, German, and English were sent all over Europe to prominent amateur and professional photographers, requesting ex-

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hibits, with the object in view of making this year's Convention of the P. A. N. E. an international exhibition of the best work of all countries. The success of these efforts will be seen when it is learned that returns were secured from Russia, Germany, Belgium, France, Norway, Sweden, Switzerland, Austria, England, Scotland, Ireland, Wales, Mexico, Canada, and Hawaii.

Apart from the pictures received there were also many cordial letters from parties who were unable to exhibit on account of their principal pictures either being at or promised previously to other exhibitions, but who highly commended the object that inspired the appeal for their work, and approved the views of the officers of the New England Association. Their support was promised for next year's exhibition. American photographers were not behind in endorsing these efforts to bring into closer communion the amateur and professional, but lent their moral support toward the same end; and although at this exhibition the photographic work of the United States was naturally almost wholly from the professionals, yet the support of the higher class of amateurs, which on account of their previous exclusiveness has been spoken of as "The Linked Ring," was seen in the loan exhibit from Mr. Alfred Steiglitz, of the New York Camera Club, which consisted of facsimile reproductions of the work of Alfred Steiglitz, Gertrude Käsebier, Frank Eugene, Rose Clark and Elizabeth Flint Wade, Mathilde Weil, Robert Demachy, Clarence H. White, Edmund Stirling, and Craig Annan.

There were other reasons besides this exhibition of pictures that marked the importance of the Convention to the New England people, for it is principally to mark the view which the general public has of such exhibitions, as shown in this case by the people of Boston and vicinity, that this article is written.

It is not so many years ago that the artists of Boston considered that photography was way down in the scale as compared to true art, and the growth and recognition of its high artistic standing now accorded to it in this section of the country has been won by the exhibitions and efforts of the New England Association and its most progressive individual members, in and near Boston, who, as members of the Lens and Brush Club, have availed themselves of the instruction afforded by schools, lectures, and criticisms of pictures by various celebrated painters, sculptors, and critics.

Owing to the brief opportunity the general public of Boston had for seeing the exhibition during the three days' session of the Convention, the Massachusetts Charitable Mechanics Association of Boston has arranged with the officers of the New England Association to exhibit the foreign pictures, together with a selection of the best representative work of New England artists and the Salon for 1902, at their twenty-first exhibition, which commences September 22d, and continues for six weeks. It will occupy a space of 8 x 137 feet, an entire side in one of the galleries in "Grand Hall," and enables them to present "Art Photography" as their sole art display for this exhibition.

In our next issue we will give the official report of the Convention, with the remarks of John J. Enneking, Professor O. W. Beck, W. J. Edmondson, Professor A. H. Griffith, and Morris Burke Parkinson, the principal speakers, embellished with illustrations from the best foreign and domestic work there exhibited.

The officers selected on the Executive Board for 1903 are: For President, Morris Burke Parkinson, Boston; First Vice-President, G. E. Tingley, Mystic, Conn.; Secretary, George M. Bolton, Rockville, Conn.; Treasurer, S. M. Holman, Attleboro, Mass. Vice-President for Maine, W. C. King, Portland; for New Hampshire, R. H. Kimball, Concord; for Vermont, C. H. Fuller, Rutland; for Rhode Island, F. W. Stiles, Westerly.

The subjoined letter from President Charles W. Hearn bespeaks the personality of its writer, and lets light upon the energies responsible for the success of the Convention.—EDITOR W. P. M.

BOSTON, MASS., Sept. 1, 1902.

MY DEAR MR. WILSON: I want to thank you for your hearty support for the past few months; for foreign magazines, etc., that you loaned me, and for the dif-

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ferent addresses you gave me of desirable parties to whom I could write for work. The names you furnished, with list of others received from abroad, opened up large avenues, so that at the present time I am in touch with a hundred or more of the best artists, both amateur and professional, throughout all Europe.

We had a great Convention, as you know, but "the boys" on the Board have an equal share in it with myself, for they have given the strongest kind of support. Our secretary, Mr. Bolton, is a "*dandy*" —a man of good judgment, a tremendous worker, a unique advertiser, and a strong man in every sense. "WILSON'S" can have any pictures you want for the October issue, and the full official report. With best wishes,

Cordially yours,
CHARLES W. HEARN,
President P. A. N. E.

PRACTICAL POINTS ON BACKGROUNDS.

BY OPERATOR, IN "THE PHOTOGRAPHIC CHRONICLE."

THE study of backgrounds is one to which every assistant should pay special attention, for nothing is so sure a sign of second-rate work as a badly-chosen background. All first-class photographers select the background with great care, bringing all their judgment and artistic knowledge into play. In many cases photographers have made a reputation and a big business on the use and manipulation of artistic backgrounds. To reach the front rank in professional photography it is needful to become expert in fitting these accessories into their proper position with respect to the sitter and the style of the picture. To take one background to be as good as another so long as it is not cracked or the paint rubbed off is an entire mistake. As with clouds in a view, only one ground will be most suitable for a particular composition. The choice and selection of backgrounds is a fine art, depending on the personal ability of the photographer for its success, and therefore it is no easy matter to teach it to others. All that can be done is to lay down several broad principles, which must be modified to suit special cases. These principles I will try to expound.

The subject and background must always be in unity. A naked savage in the midst of his natural surroundings does not strike us with a feeling of unfitness. Put a top hat on his head and the composition jars at once. Such mistakes in artistic sentiment are seen in photographs—a lady in evening dress being placed by the sad sea waves or upon the wild and lonely moor; a cyclist in a country lane standing upon a carpet, and a man in evening dress in the midst of woods, with a curtain suspended from the clouds, are a few examples of a lack of unity in sentiment. Such compositions are not so common as they were, I am glad to say, and we rarely see stone balconies built on carpets, grass flourishing on the seashore, trees growing in drawing-rooms, and boats sailing on the mountain-side as we did at one time. These crude compositions have disappeared with the growth of culture among photographers. They are often very funny, it being a mystery how any one could have let them pass. It is not easy to avoid them in studio practice without the knowledge that these mixed compositions are in bad taste.

The sitter and background must harmonize. It is wrong to have the one simple and the other complex. For instance, we all know the elaborate backgrounds which some photographers employ with their sitters. Pose a child in a plain muslin dress against them, and the effect is at once discordant; yet with the richly-dressed society lady they harmonize well. The simply dressed need a background as simple; the more complex the personal adornments the more ornamental must be the background.

A composition must have a fine balance between sitter and background. It must not be all sitter and no background, nor all background, and, puzzle, "Find the sitter." The exact proportion to maintain is hard to lay down by rule; it is just one of those things which only a trained judgment can decide while the picture is being

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composed. Very few photographs are well balanced, the cabinet head, as a rule, being wanting in background, the three-quarter lengths having too much. The three-quarter-length sitting is more often well balanced.

Objects depicted in the background must be in true proportion with the sitter. Failure to meet this condition is common to the the majority of photographic scenic backgrounds. Place the sitter where you may, the perspective is always false, and instead of true proportion, the effect is unnatural. I do not suppose that this can ever be remedied completely. With the painted background all that can be done is to avoid having vases that appear as big as houses, roads that are mere sheep-walks, and castles that must be too small for dolls to live in. The same applies to backgrounds which contain no definite outline; it is not always possible to place them in such a position that the effect produced is a real one. Nine times out of ten it is obvious that there is a background behind the sitter. What is desired is that the background, instead of being distinct from the sitter, should be a part of the whole composition. This is best seen when the proportion is accurate.

Unity, harmony, balance, and proportion are often secured by contrast. Thus the strongly-lighted side of a sitter may be placed against the dark side of the background and the dark side against the light —a double contrast which gives a better composition than if the position was reversed. The same is true of the subject in white posed against a dark ground. When the composition is mainly white, then a small proportion of the black gives a contrast which restores the harmony and the balance. There is a given proportion between light and shadow in every composition from which it takes a characteristic appearance. The Rembrandt is mainly shadow, strong and vigorous in effect. As the proportion of light is increased, so the picture becomes more delicate; hence ladies and children should be photographed so that the light predominates, while men will bear a much larger share of shadow.

Our leading professionals are giving up the scenic background because they have found out that the so-called "plain" background is, in reality, an accessory admitting of endless variations. There is no such thing as an evenly-illuminated surface in a photographic studio, every area being more or less shaded. The plain background may be lighted in numberless ways, all of which can be used in portraiture. To show the possibilities of a plain background, I will mention a few. Backgrounds can be lighted

From the top downward.
From the bottom upward.
From the left side.
From the right side.
From the centre outward.
From the sides to centre.
From the corners to centre.
From the top to bottom corner.

Here are several different ways of lighting a plain background, each one of which can be utilized to make an effective picture. These may also be combined to form other variations; hence, skilfully used, the plain background really consists of an infinite number of grounds. This is no theory, but a practical fact, which can be easily proved by comparing the backgrounds of our painters and photographers. No two are exactly the same, and until one has made the comparison it would hardly be believed how great is the variation and the possible number of combinations. Add to this the power of increasing and diminishing the illumination of a plain background, and it may be understood that our best photographers can get all the effects they want without the aid of the scenic background.

THE Anthony & Scovill Co., of New York, occupied a large space at the Convention, displaying their well-known cameras, and a special exhibition of prints on cyko, actino, and collodio-carbon papers. These were very effective, and must have proved a capital advertisement of the qualities of these papers. R. A. Anthony, A. C. Lamoutte, W. C. Marshall, J. B. Pelgrift, and others were in attendance at this exhibit.

The American Paper Mills Company, Kensington, Conn., represented by J. W. McDowell, made an interesting display of artistic folders, enclosures, and mailing devices for photographs.

The Bausch & Lomb Optical Co., Rochester, N. Y., had an attractive display of lenses and shutters, with an exhibit of pictures made with their lenses.

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PICTURES AT THE CONVENTION.

RARELY, if ever, have the pictures sent to our national conventions been so admirably arranged and displayed as was the fine collection sent by the fraternity to Buffalo. The great Convention Hall was wholly devoted to the pictorial exhibition and the booths of the manufacturers and dealers. The former was arranged within a rectangular space of ample size, with central screens forming two long galleries. The latter were laid out side by side around the outer walls of the hall and exhibition space. Thus the division of the two interests was complete, and one could enjoy either of them at will without possibility of interference.

The general average of quality among the pictures was surprisingly high. It is true that there was a large proportion of poor work displayed, but this was offset by a still larger proportion of good work. The absence of "freak" photography was more noticeable this year than last; in fact, with the exception of two or three crude attempts at so-called photographic etchings, the whole exhibition was made up of photographs conspicuous for their artistic or technical quality. The general favor given to permanent printing papers, platinum, carbon, etc., was another notable feature of the exhibition. We were pleased to see this desirable tendency. The sooner photographers appreciate the fact that their patrons want permanency as well as excellence in results, so much the sooner will photography take a higher stand among the arts.

It is, of course, impossible to review individually the hundreds of prints displayed upon the walls of the pictorial section. It would be unprofitable, also, to give simply our personal opinion of the various exhibits prepared with so much individual care and thought for the Convention. We present, therefore, what should prove much more interesting, viz.: the opinions of prominent photographers concerning the exhibits. These expressions of opinion were secured with considerable exertion, and we agreed that the names of those criticising the exhibits should be withheld from publication. That these opinions were given by men of national reputation, however, our readers are assured. The names given are those of the photographers whose exhibits are mentioned.

E. B. Core, New York City: A peculiarly interesting exhibit, comprising pictures of children. Among them was a group of five children with their mother, noteworthy for its composition and life interest. A group of four children and a dog should also be mentioned for its freedom from self-consciousness. The prints were all platinotypes on cream or white plate-paper mounts.

F. W. Guerin, St. Louis: An exhibit of sixteen genres, all made by flashlight, and displaying this worker's well-known skill in his specialty. The careful choice of models and appropriateness in the choice and use of accessories were apparent in all Mr. Guerin's pictures.

George H. Van Norman, Springfield, Mass., showed two large prints in sepia platinum. One of these was his well-known "Nearing the Haven," a magnificent interpretation of the lines:

> "To Death I with such joy resort
> As seamen from a tempest to their port;
> Yet to that port ourselves we must not force
> Before our pilot, Nature, steers our course."

The old man steering his boat over a stormy sea was cleverly handled, expressing the artist's conception with all the life and vigor required by the subject.

Mr. Van Norman's second picture, a three-quarter length picture of a young girl, was much admired for its highly pictorial quality.

J. H. Field, Berlin, Wis.: For some years Mr. Field has devoted himself to landscape in various moods and phases. His exhibit comprised a number of charming transcripts of nature—an old cornfield in autumn and "Morning Mists" being especially worthy of mention.

Morris Burke Parkinson, Boston: A collection of large pictures, some larger than

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life, printed in carbon; noteworthy in conception and treatment, showing uncommon skill in overcoming technical difficulties, and attractive from the pictorial viewpoint.

H. S. Miller, Fond du Lac, Wis.: A small exhibit of sepia platinums, evidencing skill in composition and technique, and expressing much feeling. Mr. Miller has vastly improved in his work of late years.

A. F. Proctor, Huntingdon, W. Va.: Another exhibition of growth along pictorial lines. One picture in this collection, entitled "Close of Day," deserves special mention for its exquisite rendering of color effects, the rich tints of evening being cleverly expressed.

J. W. Porter, Youngstown, Ohio: A display of low-tone effects in portraiture and figure pictures. Mr. Porter excels in the selection of the best parts of his subjects, and gives careful attention to spacing, with excellent results. In the opinion of the best critics the best work of the Convention was that expressed in low tones, avoiding harsh contrast and excessive detail.

Knaffl Bros., Knoxville, Tenn., showed a few charming examples of portraiture and figure work, cleverly conceived and offering delightful variety in lines and tone values.

Hall, of Buffalo, was represented by a group of the officers of the P. A. of A.; also a portrait of Professor L. W. Hitchcock, very striking and original in its handling.

C. M. Hayes, Detroit, exhibited a large picture, "After Prayers," showing a lady descending the steps from a church door. The pose, arrangement, and treatment of the figure and its accessories were decidedly good.

George W. Edmondson, Cleveland, showed ten pictures of women remarkable for delicacy of treatment in white draperies and artistic effects. Among them was a clever home portrait of a bride, deserving of high praise.

Alfred Holden, Philadelphia: This exhibit included several pictures of toilers at work in steel mills, forges, etc., well handled from purely photographic as well as pictorial standpoints. We compliment Mr. Holden upon his achievement in this peculiarly difficult field of work. In his portraits, notably in that of Bandmaster Sousa, Mr. Holden shows unexceptionable skill in managing his spaces and in subordinating the parts of minor interest to those features accentuating the character of his subjects.

Klein & Guttenstein, Milwaukee, showed a varied collection of portraits in which strength and delicacy were finely blended to secure desirable effects. A lady with picture hat formed the gem of this fine exhibit, and was much admired.

C. C. Pike, Indianapolis: An exhibition of portraiture in platinum, noteworthy for softness and delicate charm of treatment, with pictorial quality.

The Wisconsin State Exhibit included interesting pictures from the following studios: Lyman, Stevens Point; Thomas, Racine; Watton, Lancaster; Larson, Randolph; Ralph, Oshkosh; Denninger, Neenah; Zivney, Milwaukee; Klein & Guttenstein, Milwaukee; Ross, Appleton; Miller, Fond du Lac; Rice & Fromm, Milwaukee; Shreiber, West Bend; Hagendorf, Milwaukee; J. H. Field, Berlin; Johnson, Oshkosh; Pryor, La Crosse; Bish, Chippewa Falls; Barlow, Janesville.

Charles S. Hart, Watertown, N. Y.: Mr. Hart is a veteran, having been in photography since 1852 under the same roof. He showed examples of all the processes, beginning with the daguerreotype, of which he showed excellent specimens made by himself in 1853–54; an ambrotype, or positive, on glass; plain silver prints, made about 1858, and proving the durability of that process; albumen prints, and platinum prints. This exhibit thus represented every process in photography with the exception of carbon. The daguerreotypes were particularly good examples.

E. Goldensky, Philadelphia: Ten or twelve prints, closely resembling photo-

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gravures and proving Mr. Goldensky's continued growth in portraiture. A portrait of Mr. Otis Skinner was notable as a bit of fine character delineation. Two portraits of boys exhibited characteristic action, well expressed. A picture of a young girl, which might well express "contemplation" or a similar sentiment, also deserves notice as full of suggestiveness, skilfully portrayed in tone and semi-tone.

F. G. Schumacher, Los Angeles, sent six pictures, two of which were particularly attractive. One of these, a single figure of a girl, was as strong a composition as the exhibition contained. The other, showing a boy and his sister, with cane and bundle, was charming in its naturalness of pose.

J. M. Appleton, New York: We were pleased to see Mr. Appleton so much in evidence at the exhibition. His work was greatly and justly admired for the clever treatment of the subject in almost every example in his collection. The flesh qualities, the values of the draperies, and the handling of backgrounds, all proclaimed the master in portraiture.

H. Schervee, Worcester, Mass., exhibited a "Twentieth Century Madonna," representing Brother Schervee in an interesting situation at about 2 o'clock in the morning. One did not need to be told that the baby in the picture is the first-born. The expression in the subject extends even to the toes. This is not the "New Woman," but the "Old Man" himself. This picture is not of the impressionist, but rather of the realistic school, and must be seen to be appreciated.

Moore & Stephenson, Atlanta, Ga.: Six 14 x 17 carbon portraits of prominent Atlanta people. Among them was a characteristic portrait of Senator Little and two charming portraits of women.

George Moses, New Orleans, exhibited a collection of miniatures showing considerable skill and an appreciation of beauty in line.

C. S. Bateham, Norwalk, Ohio, a three-quarter portrait of a lady, displaying excellent taste in the point of view and pose of the subject.

Albany Art Union, Albany, N. Y., a figure portrait of a young man, well spaced and capably handled to secure action and character.

J. Ed. Roesch, St. Louis, Mo., sent a few interesting portraits of women cleverly posed to give the effect of height and dignity to the figures. In technique these portraits were beyond criticism.

E. C. Dinturff, Syracuse, N. Y., six pictures in olive-green carbon, excellent in pose and lighting and uniform in artistic quality.

C. F. Ray, Asheville, N. C., a large collection, uneven in quality, but containing a vignette of a woman's head and shoulders, exhibiting uncommon skill.

D. D. Spellman, Detroit, showed in his small exhibit abundant evidence of intelligent striving and pictorial growth. His portraits are marked by their careful spacing and arrangement, by which Mr. Spellman gives force or softness to his subject, as may be desired.

W. H. Partridge, Boston, exhibited four carbon portraits, the prints being on tone etching paper. Three of these were made with the Bergheim lens, and possessed a desirable carrying power. A three-quarter length of a gentleman seated also deserves mention as a fine portrait, well balanced and spaced.

The exhibit sent by the New England Association comprised a fine collection from Kimball, Concord; F. P. Lamont, Waltham; Sherman, Andover; Whitney & Son, Cambridge; and George Francis, of Nashua, N. H. In this collection also were two admirable portraits of men by Henry H. Pierce, of Providence. The Association also had three foreign exhibits, viz.; one by Pierre Dubreuil, Lille, France, consisting of six gum and platinum prints, which formed an exceedingly attractive display; also a genre by Fraulein Hildegarde Lehnert, of Berlin, entitled "One of Our Poor;" another by the same worker, entitled "Cows Returning from

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the Meadow;" also seven platinum studies of landscape and sea views, some with figures, by William Dreesen, Flensburg, Germany, which for beauty of composition, balance, and other points of artistic merit were much admired.

C. W. Hearn, of Boston, President New England Association, exhibited nine cabinet portraits in passe-partouts from his regular studio work. An interesting collection, and quite in keeping with his previous high standard.

C. R. Reeves, Anderson, Ind., four large and four small pictures of children which impressed many as the best individual collection on exhibition. Mr. Reeves' work is notable for its roundness, life quality, and brilliancy combined with softness. We hope to reproduce a couple of examples in a later issue.

S. Aune, Portland, Oregon, exhibited a girl's portrait, printed in carbon on Whatman paper, which was in every way the strongest bit of work from the Pacific Northwest.

F. R. Barrows, Boston, seven very pretty portraits in carbon, one of them after Romney. Two collections of children's pictures, presenting ten different poses of the same child, which must have possessed great attraction for the parents. The head and bust after Romney was a clever bit of work.

A. N. Camp, Jamestown, N. Y., five large portraits; excellent in technique and general quality; also, a frame of electric light portraits, pleasing in pose and lighting.

J. Will Kellmer, Hazleton, Pa., exhibited a bust portrait of a man, showing much force and character. Mr. Kellmer keeps to his high standard very well.

W. N. Brenner, Cincinnati, O.: Five platinotype portraits evidencing much artistic feeling, and well calculated to please people of good taste and culture. Mr. Brenner shows continual improvement in his work.

Victor E. Georg, Springfield, Ill., sent an attractive collection of portraiture, in which the most graceful effects had evidently been sought with much care.

Burr McIntosh, New York, exhibited a large collection of professional portraiture, containing some of the most skilful work sent to the Convention. The prints were 8 by 10 inches, carbon, framed close up in dark woods.

C. C. Langill, New York, five photographs of large buildings, notable for their technical quality and choice of point of view to secure every possible advantage. Among them was a view of a building, made with the new Goerz Hypergon lens, embracing an angle of 150° without distortion, and with perfectly even illumination over the whole of the plate. This was secured with an instantaneous exposure, and represents a remarkable feat in wide-angle work.

The Iowa State exhibit contained pictures from Hostetler, Davenport; Pierce Studio, Ottumwa; Townsend, Muscatine; E. W. Spurr, Cresson; Frank E. Medlar, Spencer; M. W. Starks, Sioux City; Townsend, Iowa City; Brandt Bros., Davenport; Reynolds, Washington.

The Northwestern States Exhibit comprised pictures from the following: J. A. Gunderson, Winona, Minn.; Sweet Studio, St. Paul, Minn.; Jansrude, Wilmar, Minn.; Zweifel, Duluth, Minn.; J. R. Snow, Mankato; C. A. Zimmerman, St. Paul; Phillips, Red Wing, and Kasnrath. In this exhibit two or three etched portraits by the White Studio deserve creditable mention.

The Pacific Northwest Photographers' Association exhibit comprised pictures from the following: A. Butterworth, Portland, Oregon; A. L. Jackson, Tacoma; C. Aerne, ——; J. H. Meyers, Boise City, Idaho; George Brass, Seattle; Cronise Studio, Salem; S. Aune, Portland, Ore.; E. H. Paige, Davenport, Wash.; Hofsteatter and Hann, Portland.

In the Indiana State Exhibit were pictures by G. G. Holloway, Terre Haute; G. J. Parrot, Fort Wayne; Larrimer Studio, Marion; Dalby, Richmond; Nieswonger,

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Muncie. A girl's head, by Holloway, was very clever. Parrot had also two admirable studies of children.

S. H. Lifshey, Brooklyn, N. Y., exhibited a picture of a child, low in tone, the figure simply and cleverly disposed. The spots were beautifully placed. A picture of a lady sitting in a chair and posed in the lower corner of the frame was included by Mr. Hitchcock in his selection of ten pictures from the Convention exhibit as an example of his views on spacing. Three of Mr. Lifshey's pictures were pronounced "very fine" by Professor Griffith.

David Rosser, Pittsburg, "Reminiscences of the Sixties," showed good conception, and the other work in this exhibit was attractive in quality.

J. E. Giffin, Wheeling, W. Va., three pictures in a style which should be attractive commercially. A three-quarter figure of a lady was pronounced the best of the collection. Mr. Giffin is very happy in photographing ladies, this being a prominent feature of his work.

Marceau, New York, sent an interesting display of figure portraiture which attracted considerable attention. Mr. Bassett, at present operator at the Marceau Studio, has never shown his skill in pose and lighting to greater advantage than in this Convention display.

TELEPHOTOGRAPHY.

It is about ten years since that the first practical telephotographic lens was placed on the market. An Englishman was the first in the field, but he was so closely followed by two separate German workers that probably all had been independently following the same idea. Everybody was at once interested, and there the matter seemed to rest. A great number of telephoto lenses were doubtless sold, and are in use, but their use is limited indeed, compared to what it might with advantage be. The men who use a telephoto lens are very often men with a hobby—telephotography. Just as one man specializes on yachting and another on architecture or engineering, so these men stick to distance work. But usually they are amateurs, and approach the subject from the pictorial viewpoint.

The telephoto lens is not an "all round" lens, but it is one which should have its place in the photographer's battery, just as surely as his wide angle lens. Like this latter, its opposite, it is useful in places where no other lens will do the work; in other words, it is an added power in the hands of the photographer. The telephoto lens is useful in the studio; but that shall be referred to later. Our customers are fairly satisfied at least with the drawing of the photographs we give them, since we have learned to keep their hands and feet down to due proportions, and although the telephoto would improve work in this direction, it would not be immediately noticeable by the public, and lead to a rush of orders. But out of doors, especially in views of cities or buildings, results would be obtained which would be immediately successful. The telephotograph shows us larger views, perfect in form and definition, than are possible with any ordinary lens. It will give a picture much more perfect in definition than any the eye can see, and yet without any harshness; but flooded with a veil of atmosphere or something rather denser. Giving us a distant view it presents a much more correct view in drawing or perspective than the same object or scene would appear, taken from a closer viewpoint with a shorter focus lens. And so obvious is this superiority that the carefully-chosen telephotograph would beat the ordinary viewpicture as a selling proposition every time.

The telephoto lens has one very practical advantage. Strictly speaking, the photographer does not purchase what is usually considered a lens, but merely an attachment or an addition to some lens he already possesses. The practical bearing of this is that by the use of an attachment, costing say $30, a lens will do work which would before the telephoto days re-

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quire a new lens costing more than ten times that amount, and the attachment can be added or removed at will, leaving the lens to do its own work, as originally planned, when desired.

As against this wonderful economy may be balanced the cost of a camera of long extension. Longer extension, that is, than that with which fairly long focus lenses are used; but much shorter than if the non-telephoto, $300, long focus lens referred to above were used.

Possibly a large size plate will be used by some photographers, but a good deal of useful work can be done with a 7 by 9 camera, or one even smaller. I have not used one larger than 5 by 7, and this with a supply of plate and a very strong tripod weighs well toward twenty pounds. With a bellows extension of 26 inches work can be done which ordinarily would require not only a very expensive lens, but a camera more than five feet long. The theory of the telephoto is simple; a negative or concave element is placed behind the usual lens, and this "spreads" the picture.

One practical result of a telephoto lens is that with it views of buildings, whether single buildings, or cities, may be taken from a distance of several miles, always provided that no opaque object intervenes. In thousands of places new "viewpoints" can be discovered where now the only obtainable views show much straining of the lens and wrenching of perspective. But the telephoto is not confined to an actual stretch of distance measurable by miles. It will work in feet equally well, giving a good rendering at thirty feet, where an ordinary lens working at a fifth the distance would give distortion. An object may be magnified a couple of diameters, or a score. But a magnification of five or six diameters will be easy to negotiate and will prove sufficient for most work. Given a view of a building which appears in a photograph as barely three-quarters of an inch in length, and with a six diameter increase, it will measure four inches, and be tall in proportion.

The advantages of telephotography are obvious. In choosing a more distant view we obtain a perspective much superior to even that given with a long focus lens; and we get a beautiful softness of atmosphere at which the most confirmed stickler for detail cannot cavil. The telephoto sees all that the eye can see, and more; in its magnification it brings out the detail as does a good field glass, but all mellowed by distance. Often a building can be obtained from a distance which cannot well be obtained from a nearer point. Architectural detail, high on some building, can be obtained with 3a minimum of distortion.

It has been objected that wind very seriously interferes with work. This is more obvious than true. If the camera is firmly planted on its tripod, and firmly stayed, the view itself will not give more trouble than usual. The difficulty is that we are facing longer exposures, and so cannot avoid movement by snapshotting. But in many pictures the trees fall into a due proportion. They do not rise above the horizon to be half blotted out by the glare of the sky, and they appear as clumps, rather than as a mass of distinguishable limbs and leaves. Where trees do appear in the foreground a quiet day must be waited for. On very hot days heat trembling may spoil the view. This can only be avoided by working earlier or later in the day—preferably earlier.

The question of exposure is a simple one in calculation. Decide what would be the correct exposure if the positive lens only were used, and then multiply the time by the square of the number of diameters enlarged. If a negative is enlarged six diameters the exposure would be increased thirty-six times.

And yet many negatives can be taken in a very short fraction of time. We are dealing with distance where exposures are very much shortened. Many a distant view can be taken in one-fiftieth of a second. With a sevenfold enlargement one second would suffice. In practice it will be found that an exposure rather less than full will often suffice.

A color screen is sometimes useful in cases of haze. But more often it may be dispensed with. Orthochromatic plates should be used, and they should be backed.

THE finest pictures of the Boston Convention will embellish our October issue.

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COPYING DAGUERREOTYPES.

BY JOHN A. TENNANT.

THE copying of daguerreotypes offers a test of skill worthy of the enthusiastic copyist at his best. Much has been written about the subject, special stress being laid upon the necessity of "cleaning" or restoring daguerreotypes before their reproduction. As this is not invariably necessary, my first word will be a word of caution. The Daguerrean image, although in a sense absolutely permanent, is extremely delicate in structure, and may most easily be destroyed by an incautious touch. As a rule the Daguerrean artist did his work well, and if the original to be copied shows no signs of tarnish, it will be well to set about its reproduction without any attempt at restoration. If the surface under the glass cover in the little case shows dust, remove the glass and carefully clean it. Any dust on the surface of the picture image itself may be removed by very lightly passing a soft camel's-hair brush over it. On no account must the surface be touched with the fingers or the most delicate material, or the delicate film will be injured. Mr. W. M. Hollinger, whose clever copies of daguerreotypes have excited the admiration of all who have seen them, tells me that very rarely indeed does he in any way attempt the renovation of the originals sent him for reproduction. This is weighty counsel, since few men have been so wonderfully successful in this particular field.

If the entire surface has become darkened or tarnished by the influence of the air upon the film, some restoration is, of course, essential to the best results. To effect this, remove the silvered plate from the case and place it, image uppermost, under a box-lid or other protector from dust, etc. Now put a small piece of potassium cyanide (deadly poison) into a graduate, and pour over it an ounce or two ounces of water. Holding the daguerreotype by the corner with a pair of pliers, rinse it in clear running water; then pour over it the weak cyanide solution (a 3 per cent. solution is usually employed), and return it to the graduate. Repeat this operation several times until the discoloration quite disappears. Within a few minutes the daguerreotype will appear as fresh and as brilliant as when first made. Wash well in running water, and then, before the surplus water has time to collect in tears upon the image, begin to dry the plate gradually over a spirit-lamp, holding the plate in an inclined position so that it will dry from the uppermost corner. The plate must not be held too long over the flame, or the thin silver film may separate from its copper support. The secret of success is in the use of pure water for the final washings, and the drying of the image without check or the formation of tears. The picture should now be restored to its case, and the edges secured with gold-beaters' skin or gummed paper to thoroughly exclude the air.

In copying daguerreotypes in their cases it is usually advisable to turn them on one side. If fixed to an open board or support, reflections will undoubtedly give trouble, and these are not always visible on the ground-glass. It is, therefore, usual to copy daguerreotypes placed at the end of a fairly deep box lined with velvet, the lens being pointed at the picture through a hole cut in a black cloth flap which covers the front end of the box. Light is admitted through openings at the side of the box. The exposure is necessarily protracted. Care must be taken to avoid movement during the exposure. If the marks of the buffer—fine horizontal lines—are seen in the resulting negative, the plate should be placed vertically and re-photographed, when these lines will usually disappear.

In explaining the poor quality of the average copy of a daguerreotype, as produced in many studios, Mr. Hollinger informs me that this is probably due to two causes: First, daguerreotypes sent in to be copied are usually allowed to accumulate with other copying orders until the photographer or his assistant can devote a dull day to the work. They are then "put through in a bunch," without much indi-

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vidual consideration. Mr. Hollinger avers that the daguerreotype deserves just as much consideration as the living sitter, and he therefore takes each one separately as part of the day's work, giving it place among the regular sittings of the day. By this plan the original gets the care and attention it needs, and the results amply justify this common-sense treatment. The second error made by the professional is his slavish adherence to the old rule concerning "copies" in general, viz.: "Avoid hardness, and get all possible detail." In other words "expose for the shadows and let the high lights take care of themselves." This, in copying daguerreotypes, can only result in flatness and gray shadows—the things to avoid. Mr. Hollinger, in his practice, gives a generous exposure, and in development keeps his attention on the high lights, letting the shadows come as they will. In this way he secures the strongest high lights in development, making after-manipulation of the negative unnecessary as far as crispness and brilliancy are concerned. It necessarily follows that he secures rich shadows with all the details desirable therein. In this way he obtains negatives requiring very little handwork before printing, and vigorous copies without harshness, usually more pleasing than the originals from which they were made.

There is another point to be mentioned. Clever as the Daguerrean artist undoubtedly was, he did not understand the art of spacing. In copying his productions, therefore, it is often possible to improve upon his work by careful attention to the trimming (or shaping) of the copy. If shaped according to our modern methods, the artistic value of the daguerreotype portrait may often be enhanced and effect wonderfully improved.

AT-HOME WORK.

BY H. W. ROUSH.

THE total ignoring, by the average professional, of the possibilities of at-home portraiture is one of the wonders of the photographic world. In many ways the gallery is as unreal and untrue as it is necessary. Necessary it undoubtedly is, but it is not worthy of the practical monopoly which has been accorded it. The artificiality of much connected with the studio has passed into the realm of common ridicule. The excesses of accessory and background, the conventions of pose and of lighting, became monotonous to nauseation and led to an inevitable reaction. The change to simplicity and naturalness, to banishment of accessory and limitation of background, was a change for the better but not to the perfect thing. In the nature of things no one style or fashion can be the best. Some are inherently and everlastingly bad, others are good, but fashion cannot fix on any one thing for long. To break away from what was bad was a right move, but the adoption of simplicity and a certain negative correctness was but a step.

The naturalness of at-home portraiture makes it as right as the old accessory period was wrong, and although it is not likely to become a common line of professional work—at least for some to come—there is no reason why it should not hold a place in the economy of the fraternity. Those photographers whose work keeps them busy, particularly if they are men in large towns, have no present use for at-home work; but where trade is limited this work is as necessary a help as is the photographing of school or wedding groups. It might almost be said that at-home work is *limited* to country towns. The city flat is a heart-breaking place in which to practice portraiture, and outdoor work has limited possibilities. In the larger houses there is, of course, more scope in the size of the rooms; but far the greater possibilities lie in and around the country house, lighted as it is from four sides, and with its stoop or veranda and garden.

At-home portraiture has a great educational value. To a young photographer it is more than useful in its lack of monotony,

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its difference in each subject, leading to the necessity of a versatile mind, quick to see the best possibilities. One of the most level-headed men in the profession pushes for at-home work and turns over nine-tenths of it to his son. He is a busy man himself, and could well keep his son busy about the gallery, but he sees an educational value in the other. But it was direct income to the photographer, rather than education, which prompted this article. There are many people who are nervous on entering a studio, and some who decline to enter one. By getting *at* the sitter among familiar and comfortable surroundings we get the sitter in a happy frame of mind. And we get them in both a pose and a light which is familiar and congenial to themselves and to their friends. Exposures will be a little longer, of course. The light will usually be much less than in the studio, and the lens must be stopped down a little to do justice to the furniture.

Often a commission for at-home portraiture may be extended to one for some of the rooms. It is a good plan to carry a wide-angle lens, and after the portraiture is finished, if the room and the people seem the right kind, to take a view of the room also. Whenever possible, a visit should be made to the house before any photography is attempted, when the size of the rooms and the direction and placing of the windows can be noted. Then when the camera is taken the exact handling of the light will be understood and the photographer will appear to know his business.

VIGNETTING.

BY ROBERT MELVILLE.

"CLICK! click!"

I was chatting with the photographer, and from the room overhead, clear amidst the chatter and laughter of the printing girls, came that persistent click. I looked inquiringly at the photographer.

"Yes," he replied, "that is the old jack turned into a vignetting machine."

Later I saw it, an English invention, he told me, for roasting meat before the fire. A creaking key wound up the mechanism, and it slowly revolved for a minute in one direction. Then "click!" the motion was reversed and back swung the power. It was a supposed improvement on the twisting and untwisting of a piece of string. Suspended by three cords from the hook which was originally intended for meat was a flat tray, and on this were two or three printing-frames.

"Those are vignettes," he explained. As they slowly spun round they printed with a softer edge than if left stationary on a ledge. Usually the tray was slightly tilted, so that the light worked a little further under the vignetting lead, the extra light touching each part in turn as the opposite side of the frame was the more elevated.

The photographer was very persistent in his belief that vignettes were still much in favor, and equally sure that there was not time for much individual manipulation with the average commercial work. The photographer was doubtless right. From Litrit downward we find many photographers using the vignette in some form or other. It may be a "camera-sketch"—light, dainty drapery melting into, and yet distinct from, a light background, the print mounted on a light-tinted support. The whole effect is an aim at delicacy in one key, an avoidance of any suggestion of contrast.

The vignette made with discrimination may be very beautiful, and will be a business bringer just as surely as the old-time vignette, hard in line and stereotyped in form, scares away a desirable class of customers.

Half the secret of successful vignetting is to have a vignette which is adjustable. There are several of these on the market, and all that I have seen are satisfactory. A couple of minutes is not very long, but it is a sufficient time to allow a negative to be judged and the vignette arranged. Two common mistakes are to use too small an

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opening and to place the vignette too close to the negative. Instead of being nailed flush on the printing-frame, as they sometimes are, they will do better work if they are raised a full inch above the glass. A home-made vignette second to none can be made from a thin bit of sheet-lead. The edge of the opening can be bent upward or outward to any extent to control the light.

A very slight obstruction is sufficient to make a dense part of the negative print white, and conversely the light will work further under the vignette where the negative is thin. A tuft of cotton batting is often suggested as a remedy for this, but a judicious closing up or pressing down of the vignette will sufficiently control it. A very dark background is not often suitable for a vignette, or rather it requires very careful handling. One of medium tint is better. A vignette is often improved by a slight sunning down of the border after the print is taken from the frame.

There is a fixed belief in many minds that the vignette is bad. Not a few men of experience have condemned it, root and branch. At the time and for their trade, doubtless it was the wrong thing, but only because it had been overdone and *badly* done. The vignette is always popular, and it is eminently suitable for some sitters. Almost the whole secret of it lies in a little judicious care.

WITH THE TRADE AT THE CONVENTION.

THE exhibits of the manufacturers and dealers were unusually interesting and attractive this year. They were arranged around the outer walls of the pictorial exhibition, and were tastefully decorated and furnished.

The display made by the American Aristo Company was at once the most extensive and the most beautiful. It occupied one end of the great Convention Hall, all the exhibits being framed and arranged with an eye to effectiveness. The prints cleverly displayed the qualities of the Aristo printing papers, and in many cases the examples of work shown were more attractive in quality than prints from the same negatives hung in the art exhibition proper. Some idea of the representative character of this wonderful exhibit may be obtained from the following list of exhibitors in the American Aristotype Company's display: Jas. A. Arthur, C. M. Hayes & Co., D. D. Spellman, A. G. McMichael, Detroit; Charles R. Quay, Flint; J. L. Paul, Port Huron; Wm. L. Smith, Saginaw; J. W. Rogers, Bay City; George Habernicht, San Francisco; Vaughan & Keith, San Francisco; F. A. Wabster, Oakland, Cal.; Knaffl Bros., Knoxville, Tenn.; J. L. Cusick, Louisville; W. G. & A. J. Thuss, Nashville; Pike & Johnston, Wilhite & Holloway, Indianapolis; C. R. Reeves, Anderson, Ind.; Rice & From, Klein & Guttenstein, Milwaukee; P. H. Rose, Providence; D. C. Beckford, W. H. Partridge, H. Chickering, Boston; H. H. Pierce, Sands & Brady, The Shepard Co., Providence; Will Armstrong, J. H. Garo, Boston; F. Gutekunst, Gilbert Photo Co., Gilbert & Bacon, Harrison Krips, Samuel Gray, Philadelphia; J. F. Bryce, J. Kennedy, Toronto, Ont.; Charles Walinger, Chicago; E. L. Fowler, Evanston; Tom Harrison, J. S. Windeatt, J. W. Gehrig, W. H. W. Jones, C. W. Longdon, Jarus Weed, R. Coover, Chicago; Lee Bros., W. R. Miller, Minneapolis: J. R. Zweifel, Duluth; L. F. Jansen, H. D. Beach, Buffalo; Dudley Hoyt, Rochester; Targuharson & Whithall, Smith & Curry, Rochester; E. C. Dinturff, P. S. Ryder, John Winter, Syracuse; D. Rosser & Co., Pittsburg; J. E. Giffin, Wheeling, W. Va.; Baker Art Gallery, Innes & Kiefer, Columbus; E. Decker, J. F. Rychr, Horton & Co., Cleveland; Theo. Marceau, Pach Bros., Sarony, D. H. Anderson, A. F. Bradley, Dana Studio, S. Newman, J. Schloss, New York; F. T. Butler, Brooklyn; A. K. Peterson, Fitchburg, Mass.; H. Schervee, J. C. Bushong, Worcester, Mass.; Chris. Johnstone, Hartford; H. Randall, Hartford and New Haven, Conn., and Ann Arbor; The De Lamater Studio, Hartford; F. H. Curtiss, New Haven; J. Haley, Bridgeport, Conn.; F. W. Rice, Worcester, Mass.; W. M. Morrison, G. W. Longdon, Brand Studio, Root Studio, Chicago.

The Rotograph Co., New York, had an artistic exhibit of pictures made on their well-known bromide papers, the arrangement and excellence of these attracting a continual stream of visitors. This exhibit was in charge of Messrs. B. Russegger, Juan C. Abel, and others.

W. P. Buchanan, of Philadelphia, with Mrs. Buchanan and Mr. MacCallum, had an interesting display of backgrounds, filters, Luxo flash powder, and apparatus. The Grovercat souvenir distributed at this booth was in general demand, and was the most attractive of all the souvenirs prepared for the Convention.

The A. M. Collins Manufacturing Company occupied an unusually large space with a fine display of novelties in mounts and enclosures, comprising all their latest and forthcoming introductions. Messrs. Henry H. Collins, Jr., and A. G. Stone had general

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charge of the exhibit, assisted by numerous attendants.

Among the prominent visitors to the Convention we noted Mr. Edward Cope, formerly associated with the A. M. Collins Manufacturing Company, but now retired from active service.

The Sprague & Hathaway Co., Boston, had a much-admired exhibition of enlargements and prints finished in special styles, pastel, water colors, etc. The reputation for portraiture of the highest class, long enjoyed by this well-known house, will certainly be enhanced by the splendid showing made at Buffalo. Mr. Woodward was in general charge of the exhibit, and was one of the busiest men at the Convention.

Rough & Caldwell, New York, made an unusually elaborate display of backgrounds, and did a correspondingly large volume of business. Mr. C. W. Tremley and Messrs. Rough and Caldwell were in attendance and seemed to have little leisure.

James H. Smith & Co., Chicago, exhibited their famous burnishers and other specialties. The display covered almost all the studio conveniences needed by the professional photographer, and attracted much attention. The hand-power fan distributed at this booth was in universal demand, and formed an excellent advertisement of the common-sense helps manufactured by Messrs. Smith & Co.

Mr. W. I. Scandlin, formerly editor of *Anthony's Photographic Bulletin*, showed many clever examples of advertising booklets and folders intended to serve as business bringers. The Business Development Bureau, inaugurated under Mr. Scandlin's management, was a centre of interest during the whole of the Convention, and was enthusiastically indorsed by many well-known workers in the profession.

Taylor, Taylor & Hobson, of Leicester, England, who are establishing an American agency in New York, under the management of Mr. J. Ronald Taylor, were well represented by Mr. Taylor, who explained the special virtues of the Cooke lenses manufactured by this firm. The Cooke Focusing Lens in particular attracted much attention, and was very favorably spoken of by all who examined it.

Mr. Taylor expressed himself as pleasantly surprised by the warmth of his reception at his first American convention, and said that, from social and business viewpoints, our national gatherings surpass the English conventions in general interest. Those who met Mr. Taylor at Buffalo may be pleased to know that he has taken offices in the St. James Building, Broadway and 26th Street, New York.

Packard Bros., of Boston, had an attractive display of new ideas in backgrounds, being charcoal drawings or "background etchings," as Messrs. Packard described them. These are designed to enable photographers to closely approximate the Lytrit effects secured by Strauss, by simply placing the subject in front of the ground. The display was much admired, and a good deal of business resulted.

C. P. Goerz, of New York, made a special display of the magnificent silver cup offered in competition among professional photographers using Goerz lenses. The exhibit at this booth comprised large photographs made with the different lenses manufactured by C. P. Goerz, and the display was one of unusual interest.

The dry-plate manufacturers were well represented and had tastefully furnished reception-rooms, where their friends could meet and chat. The veteran G. Cramer was easily the most prominent figure of the Convention, and seemed to find the days all too short. The new Cramer manual on negative making, recently completed by Mr. Cramer, was everywhere in evidence, and its practical value was keenly appreciated. The M. A. Seed Dry Plate Co. was represented by M. A. Seed, George Murphy, Mr. Montgomery, and B. Eichelman. The Seed booth occupied a prominent corner near the entrance to the hall, and was usually well filled. Mr. F. L. Hammer, W. A. Nye, and G. H. Harkrader had charge of the Hammer plate interests and a cosy reception-room on the west side of the hall. The new Hammer orthochromatic plates were subjects of general praise, and the Hammer booklet on negative making was widely distributed.

The Eastman Kodak Company provided an excellent pictorial display, and demonstrated the new Kodak Daylight Developing Machine, which was universally admired for its novelty and practical utility. An illustrated description of this machine appears in our advertising pages this month, to which our readers are referred.

Willis & Clements, of Philadelphia, represented by Alfred Clements, H. Parker, and H. L. Girbardt, made a good showing of prints on platinotype paper.

The Ullman Manufacturing Company, of New York, represented by Mr. Gillette, had one of the most artistic displays made at the Convention. The exhibit was arranged on both sides of the entrance to the art exhibition, and comprised water colors, enlargements in oil, pastel, and bromides in black and white and sepia. The "De Luxe" and "Dresden" styles were especially attractive as designed for studio requirements and meeting all the demands of high-class trade at moderate prices. This enlarging and finishing department is a new feature of the Ullman Manufacturing Company, already well known for its art publications, and promises much usefulness to progressive photographers. Readers visiting New York are invited to visit the firm's show-rooms at 342 East 59th Street.

E. B. Meyrowitz, of New York, exhibited a selection of genuine Zeiss anastigmats, the display being in charge of Mr. Charles D. Roy, whose expert knowledge of the Zeiss instruments was in general demand day after day.

Other trade exhibits will be noticed in our October issue, lack of space compelling us to desist at this point.

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PRINT SELECTED FOR THE INTERSTATE EXHIBIT

From the New England Salon, 1902

By Morris Burke Parkinson, Boston

Sepia Carbon on Toned Etching Paper, 18 x 21

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WILSON'S PHOTOGRAPHIC MAGAZINE.

EDITED BY EDWARD L. WILSON.

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THE BUSINESS SEASON.

For the great majority of professional photographers the year is divided into two seasons, one of preparation, the other of actual production. The analogy, of course, is seen in the natural order of seedtime and harvest. Very few, if any, studios are kept busy all the year round. The later months of spring are usually, from a business point of view, dull or quiet. The summer months are loosely occupied with enforced recreation, or attendance at the conventions of the craft. The early fall months are devoted to active preparation for the winter business, the business season proper beginning with October and ending with April. With certain exceptions, therefore, due to local conditions or special classes of trade, the photographer's success or failure depends upon his output during six months of the year.

Wise photographers appreciate this inevitable division of the year. Their wisdom is apparent in the way they spend the season of preparation. Their success is seen in the quantity and quality of their work from October to April.

The season of preparation for 1902 is over. With October begins the season for business. The wise photographer has enjoyed his time of recreation, has garnered a goodly store of experience and instruction from his fellow-workers at the conventions, has put his plan of campaign for 1902–03 in operation, and within the next thirty days will begin to feel the pulse of the new season's business as the current of work flows in and out of his studio.

Business success is not a matter of chance, but the normal result of intelligent thinking and working. The few who appreciate this do not need any reminder of the fact. But the many are remiss and "let things slide" unless they are pushed. We write for those who have "let things slide." It is generally conceded that we face to-day a season which promises an abundant business harvest. Our country is more prosperous than at any time in its wonderful history. A series of prosperous years has given our people an abundance of ready money, and a carelessness in spending which argues a golden opportunity for the manufacturer of luxuries. The photographer should not lose sight of the fact that his productions are, in a great measure, luxuries. People can do without photographs, as the hard times of '93, '94, and '95 clearly proved. But when money is plentiful, as it is to-day, photographs are desirable luxuries. It is not difficult to persuade people to be photographed. The question of price is no longer a question of importance. The prime difficulty is to make photographs of such a quality or style as will demand the highest possible price. The successful photographer finds his patrons of to-day only too willing to pay a good price for his work, if he can offer them something of unusual value, something exclusive in style or finish, something out of the common in its attractiveness or interest. It is as Elbert Hubbard said at the Buffalo convention: "Photographs at $3 a dozen are a drug on the market, difficult to sell; but there are more people willing to pay $100 per dozen for photographs honestly worth that amount,

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than there are photographers ready to supply such photographs."

In such times the largest measure of success comes to the photographer who puts the greatest amount of intelligence and forethought into his plans for the business season. Those who enter upon the season now opening with a carefully thought-out and well-matured plan of campaign will undoubtedly reap the reward their preparation has deserved. On the other hand, those who have let the season of preparation pass unheeded will undoubtedly find business slow and unsatisfactory. The public of to-day looks for the best in everything, regardless, comparatively, of any difference of a few dollars in the price asked.

To those who do not feel prepared for what is before them our counsel is: Make up, as far as possible, for lost time. Read in the papers presented on other pages the methods and ideals offered by business men who are fully awake to present opportunities. See in the work reproduced in our supplements what others have done to meet the demand for photography of the better sort. It is never too late to mend, but those who would benefit by the season now at our doors should lose no time. Does the business establishment need attention? See to it to-day. Are the styles on display lacking in attraction, or interest, or value, or quality? Strive, to-day, to remedy the evil. Has the important detail of publicity or advertising been overlooked or unappreciated? Put forth the best endeavor, get help if needs be, and see to it that your facilities are made known to the people.

RECEPTION-ROOM METHODS AND WAYS OF GETTING BETTER PRICES.*

BY I. J. GIDDINGS.

I AM to talk with you for a few moments about matters pertaining to the reception-room. The first note I have made here is about the *Importance of a Reception-room.* Photographers in general do not seem to consider the reception-room an important part of their studio. I consider it one of the most, if not the most, important part of any studio. It is there that the samples are shown, the proofs discussed, orders taken, pictures delivered, and last, but not least, the money is received. I think these reasons I have mentioned ought to be sufficient to convince any photographer that his reception-room is of real importance.

About the *Condition of Your Samples:* There is positively no excuse for any photographer showing badly soiled or scratched samples. The effect produced in the minds of your patrons would be just the same whether you showed badly soiled articles in the reception-room of your home or badly soiled samples in the reception-room of your studio. In either case you will be considered, to say the least, an extremely careless person.

About *Retaining the Confidence of Your Patrons:* It is of the utmost importance that you retain the confidence of your patrons under all circumstances. It has been said by a successful business man, that if a firm on first starting out into business could satisfy each customer who made a purchase the success of that concern would be assured. I will admit that it is very difficult to please some people, but my experience has been that the more difficult they are to please the greater the necessity for pleasing them, as they are usually of the kind that tell their troubles to their friends, and if allowed to leave the studio dissatisfied the stories they tell will not do you any good.

About *Higher Prices:* One of the first points to consider about higher prices is to make work that is worth a high price. You cannot build up a business to-day by charging a high price for ordinary or inferior work. The higher the price you charge the greater value your patrons will

* A paper read at the Ohio-Michigan Convention, 1902.

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put on your work if it is really good. To illustrate that I want to tell you of an incident that occurred in a studio in New York. We had occasion to send a photographer to the summer home of one of our patrons. The photographer made negatives of that gentleman and his daughter. When the proofs were ready the firm suggested that I take them down myself. I took them down and discussed them in the home of our patron. He asked the price, and I told him sixty dollars a dozen, and charged him ten dollars for one print from an extra negative. When they were finished I delivered them myself, and the gentleman wrote me a check for one hundred and thirty dollars for two dozen pictures and the extra one, and he surprised me very much by saying: "Mr. Giddings, it gives me more pleasure to write this check than any check I have written in this book; these are the best portraits I have ever had of myself or have ever had taken of my daughter, and if they could not be replaced I would consider them worth at least five hundred dollars apiece." We had placed a value of sixty dollars a dozen on the portraits, our patron six thousand dollars a dozen. So don't be afraid to charge a high price for good work.

A good way of obtaining higher prices, or of adding to your order, I might say, is to make some extra negatives of a larger size than ordered, on speculation. If you think your sitter can afford to have the order increased just make a few shots on a larger-sized plate and enclose the proofs with those that were ordered. This, of course, makes it necessary for you to write a note of explanation, and you could also afford to make a reduction in the price, and in your note explain that as you have taken the negatives on your own responsibility you will not charge for them, but for the finished portraits only on the basis of a re-order. We have done that a number of times, and I cannot recollect an instance where an order has not been placed from some of the extra negatives.

About *Mounting:* One of the good ways of obtaining high prices is to mount your pictures up in an artistic manner. There is a large variety of artistic mounts on the market, and it is your own fault if you do not procure them. It is just as necessary to show individuality in the mounting of your portraits as it is in any other part of your work. The days of stereotyped styles and sizes for platinum work at least are gone by. The modern method is to light your subject so as to produce the best effect, and then trim down the prints regardless of any given size. That will also prevent a comparison of prices. You know there are some people who would not consider a portrait a good one unless they paid a high price for it, and, of course, those people should be accommodated. (Laughter.)

Be honest with your customer: If you are honest in your argument, and believe yourself what you advocate, your evident sincerity will impress your customer and make your point all the more forceful. But there is such a thing as being too honest. As an illustration of that I want to tell you a true story about General Grant when he was a boy. His father was very anxious to dispose of a certain horse, and he sent him over with the horse to one of the neighbors with whom he had been talking the day before. The neighbor looked the horse over very carefully and asked: "What's the price of the horse?" Now young Grant had been coached carefully about the price of that horse and he knew his story. He said: "Pa said the price of the horse was two hundred dollars, but if you wouldn't give that much to take one hundred and fifty dollars, and if you wouldn't give one hundred and fifty dollars to take one hundred dollars, and if you wouldn't give one hundred dollars to sell the horse for fifty dollars." It is needless to add that the horse was bought for fifty dollars. You can be honest with your customer without telling all about your business.

We will next consider the question of *salespeople:* Great care should be taken in the selection of salespeople for the reception-room, for the reason that if a mistake is made in the lighting or posing of your patron in the operating-room there is a remedy—a re-sitting—but if a mistake is made in the handling of your patrons in the reception-room and they are allowed to leave the studio dissatisfied there is no remedy; the incident is closed and the

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harm done to your business is incalculable. I have made an especial study of salesmanship for some ten or twelve years. Before assuming the management of a reception-room, and after one month's experience, I came to the conclusion that a salesperson in a studio required more self-control, tact, diplomacy, and good nature than in any other line of business I had ever engaged in. If I were asked to name two of the most essential qualities necessary to good salesmanship I would answer, good manners and good nature. A clever salesperson will be interested in obtaining orders for the very best work that you make, and will be anxious to increase your business from month to month; an ordinary salesperson will be content to take orders for anything that requires the least effort on their part, and their principal anxiety during the working hours is figuring out how little work they can do and still hold their job.

About the *discussion of proofs:* That is another important question. It is necessary to exercise the utmost care and tact while you are discussing proofs with your patrons, and if they are not satisfied with them you should be the one to suggest a re-sitting. It is a very near-sighted policy on the part of any photographer to influence a patron to order from proofs that are in any way unsatisfactory, because the fault they find in the proof is very liable to be equally prominent in the finished portrait.

As an illustration of this point I want to tell you of an incident that occurred in a studio in the East. A prominent society lady, after receiving her proofs and looking them over, came back the following day and the proprietor waited on her. She said: "These proofs are not perfectly satisfactory." After a few moment's talk he was unable to find out why they were not satisfactory, and as the likeness was an excellent one and the general style of the portrait quite artistic the proprietor influenced her to place her order instead of re-sitting. The pictures were finally finished and delivered. About a week later the lady came back with the entire lot, saying that her friends didn't like them, and asked what she should do about it. The proprietor realized that he had made a mistake in influencing that lady to order from those proofs, and he wanted a chance to square himself; so he took the portraits, tore them up and tossed them carelessly into the wastebasket, and without changing his expression in the least picked up the appointment book and asked her when it would be convenient for her to call again for a re-sitting. The lady was dumbfounded; she expected to have a nice little row, and evidently came down prepared for trouble. She looked at him a moment and said: "I am sorry you tore up those portraits; I would have been willing to take some of them at a reduced rate in addition to whatever order I might place from the new proofs." That was just the opening the proprietor was looking for. He said in his most suave manner: "Madam, we never knowingly allow any unsatisfactory portraits to leave this studio. We assure our patrons that their portraits will be perfectly satisfactory, and if we do not succeed in making them so we intend to assume all the expense of experimenting."

When the lady came back for the re-sitting she brought entirely different gowns with her, which proved that the fault was not with the portrait but with the gowns. But the proprietor did not lose anything on the transaction, as she ordered three times the amount from the new proofs. It is not only advisable to be liberal with your patrons, but it is absolutely necessary in this the age of modern business methods.

I want to say a few words about *taking orders from old copies.* People very frequently come into the studio with a copy and want enlargements made from them, and very often ask the photographer if they cannot make some changes—various kinds of changes. The photographer usually says: "Oh, yes; we can make a change—change anything you want about that picture; we can put on or take off," and they can. And when the finished picture is all ready the customer looks at it and says: "That don't look like my copy," and it doesn't. Every little change you have made has changed the entire appearance of the picture, and the effect that they have been looking at for years has been entirely changed—and that is why I claim that it is for the interest of the photographer to advise people not to

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make changes on old copies. Just as Prof. Beck has said, every little line that you put in or take away changes the portrait entirely, and that is so. I heard a remark made about changing copies since I came to this convention: A lady came in the studio and had a picture of her grandfather, who had on a tall hat. She wanted a copy and wanted to know if the hat couldn't be taken off. The photographer said: "Oh, yes, it can be taken off, but your grandfather wore that hat and it was his idea at the time the picture was taken; he wore the hat with a great deal of dignity, and I would just as soon think of knocking it off his head when he was alive as I would now that he is dead." She finally had the picture finished as it was, and it was very satisfactory.

It is a very difficult thing to tell anybody what to say. What to say to patrons in the reception-room depends entirely on what they say to you, but there is one remark that ladies are very apt to make that I think I have a very good answer for. They will say: "Oh, I just want some portraits, some cheap pictures; anything will do." Usually it is a very nice lady who says that; she comes in well gowned, with a nice hat on, and she doesn't look like a lady who wants cheap things. "Well," you say, "that isn't what you say when you go to your milliner, that you want a cheap hat, or when you get a new gown; and yet those things wear out and are gone in a short season, but your portrait often lives longer than you do, and ought to represent your individual taste just as much as your hat or your gown." They consider it for a moment and your argument has a good effect. Of course you need not use those same words—that is just a suggestion; it answers one of the common remarks that are made.

About School Work: I want to say a word about school work, because I think every photographer, if you will pardon the slang expression, has had a crack at it. It is a mistake for any photographer to attempt to make any money at school work. He might as well make up his mind that he is doing it for advertising purposes, and that if he slights his work in any way he had better have left it alone, as it will do him more harm than good. If you take orders for school work it should be the very finest that you can produce. Some photographers slight the work that they take at a special or contract rate. This is a great mistake and does a great deal of harm.

I won't say anything to you about *advertising*, because I consider the best modes of advertising are the pictures that are delivered every day in your studio. Next to that I have a catalogue here that I think will be of interest to a great many of you. I think it is an excellent idea for advertising. It won't take but a few moments, so I will read it to you, and I would like to have everybody interested to step over to my desk and examine it. It says here on the outside of the cover: "A Primer of Things Artistic from the Studio of Levi Moore, No. 15 Pearl Street Albany, N. Y." On the first page it says: "Offering this booklet, I do so with a sense of your kind appreciation in the past, and with the hope that my future efforts in the line of photography may command your considerate attention." Then on the next page is Mr. Moore's name and address. On the next is a very dainty portrait of a young lady, in an oval frame, and on the opposite page it says: "Portraits of women give scope for artistic rendering; material and fashion of dress may be made to bring out, to accentuate beauty of form and feature. The photographer with the perception of a true artist understands the charms which lie in natural fall of drapery, the pleasure that the eye receives in graceful outlines." On the next page is a composite picture representing "From Youth to old Age," and on the opposite page it reads: "Of children's portraits I make a specialty and take a just pride in my success with the little ones; in fact, at any time from youth to old age the portraits that come from my studio are life-like and pleasing." Then on the next page is a very nicely composed group. I think you will find some of the ideas suggested by Mr. Edmondson in this group—about the breaking up of the back line, and the general composition in the foreground. Then opposite it reads: "Particular attention is given to group composition, a special study being made of each individual subject, that the

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picture as a whole may be both effective and harmonious, each picture possessing the requirements of a distinct portrait." On the next page there are some cuts of interiors, with a description on the opposite page. On the back page is a very pretty little poem, which reads:

"Stay household pet,
The while I set
To catch thy charms a sunbeam net.
Charms of the bud, that hour by hour
Old time is changing to a flower.

I turn from pictured faces,
Of youthful loves and graces, to others not less dear;
Of friends true and sincere,
Whose brows the impress wear of many a pain and care
Borne bravely year by year."

On the back of the cover it says: "All styles of portraits from the dainty miniature to the life-sized head are produced with fidelity and care." And on the lower part: "In portraiture it is imperative that the sitter be free from self-consciousness. To the extent that this exists will be marred that indefinable something so requisite in a satisfactory portrait—that something suggestive of the soul which we call expression."

ADVERTISING AND PICTORIAL PHOTOGRAPHY THE KEY TO HIGHER PRICES.*

BY CHARLES P. MARSHALL.

MR. PRESIDENT, LADIES AND GENTLEMEN: It is a pleasure to attend an art convention here in beautiful Boston. It is a pleasure to meet you personally, to see your excellent pictures, and to talk to you upon a subject that closely concerns every professional photographer.

The question that confronts the photographer of to-day is this, "How shall I hold my trade and how shall I secure more business?" The answer is summed up in the one word, ADVERTISING!

When we speak of advertising we include its two branches, direct and indirect advertising. By the former we refer to printer's ink; by the latter we mean the goods themselves. Now, good authority states that it takes between $500,000,000 and $600,000,000 each year in direct advertising to move the world's business. Quite a snug sum to go into the printer's purse; but merchants believe in it, practice it, and prosper under it; else they wouldn't make those great appropriations year after year. This enormous amount includes bad as well as good advertising. And of the former there is not a little, for like any other line there are charlatans as well as honest ones within the advertising ranks. But the fact that ninety-nine out of a hundred successful merchants *do* advertise is conclusive proof that there is power in printer's ink if written right, spread right, and issued right.

Haven't you noticed that the successful merchant who understands advertising pays no more for his newspaper space and other business literature (generally less, because he buys a year's supply at one time) than the unsuccessful merchant who is a novice at advertising and who constantly shocks his community by wholesale statements and fabrications over questionable goods? In sheer ignorance and greed he helps to swell the bank account of the printer, at the same time depletes his own purse. No wonder such merchants cry "Advertising doesn't pay." No wonder an outraged public declares that advertising is a swindle, savors of blackmail, and is beneath the dignity of all solid concerns. It is a lamentable fact that there are a great many schemes in advertising. But because much of the present advertising is miserable and misleading, it does not follow that all advertising is devoid of dignity.

Look along the line a moment and see whether falsehood and foolishness or dignity and truth had a hand in the very first advertising. Let us read, for it is on record in the greatest piece of literature the

* A lecture delivered before the New England Convention, 1902.

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world ever knew if *He* who planned the first publicity was not worthy to establish the custom.

You remember that it happened in this wise. It was only a small audience; in fact, one family, cruising in a huge house-boat made of gopher wood, that read the first advertisement mentioned in history. There before their wondering eyes was displayed the grandest poster ever issued. It outrivalled, outshone, and belittled all subsequent efforts of man. Its color scheme was in beautiful tints of overlapping bands—a semicircle of radiant beauty against the blue of heaven. In unmistakable language, it read: "*There—will—never—be—another—flood!*" Thus the Almighty Himself was the first to proclaim intentions to humanity, literally engraving upon the sky a promise, an *advertisement* unto the world. This, my friends, is the first chapter in the history of advertising. The other chapters, of course, you are familiar with—how, as man's dawning taste required more than enough for mere existence, he exchanged the articles which he liked to make for the articles which his neighbors liked to make. Thus, through trade and barter and word-of-mouth, began the practice of advertising. On down through the ages from the advent of the printing press until now advertising is the lever that lifts the wheels of trade—is the warp upon which the woof of business is woven, from the soliciting of an order to the delivery of the finished product.

And now we stand at your studio door. How are you going to advertise? How are you going to spread printer's ink? How are you going to hold trade, and how are you going to build more business?

First, I will tell you some of the mediums you want to steer clear of. Make it a practice to avoid cheap, free mediums. *Cheap* mediums give the impression of *cheap* goods, and *free* mediums suggest that the firm is *too poor* to employ good paper and attractive printing. Prominent on the list are circulars or dodgers. You know they are usually distributed by some ragged little urchin, with a cigarette cocked in the corner of his mouth, who puts half the edition down the gutter; the remainder is wadded into little balls and squeezed behind door-knobs or scattered across the porch-floor. You know what contempt you hold for such an undignified distribution. You gather them up, rarely reading, and carry them in to feed the waste-basket.

Next on the list is theatre programmes, a very much overestimated medium. The affable agent approaches you, and in a confidential tone announces that he "has a special space for your special benefit at a special price." He further says, "Now this will be seen by thousands of cultured and refined people night after night, etc." But wait a minute before you close the contract. Follow down the aisle after the usher has issued the programmes and cast your eye on this side, then on that. About the first move every recipient makes is to fold back a slice from one side of the programme. Next, they fold over a strip from the bottom. Then back goes a slice from the other side. Lastly, they take a little bit off from the top. Now, what have they left? Simply a nice little square—the synopsis and the caste. The agent told the truth when he said, "The ads. would be out of sight." People go to the theatre and opera to be entertained, not to read business literature.

Novelties, such as match-boxes, fans, rulers, etc., are entirely unsuitable for photographing advertising. Clocks! Oh, deliver us from the old-fashioned time-piece that reposes on the fly-specked walls of the station and post-office. Can't you see in your mind's eye this moment those gorgeous carriage colors—the artist used to paint them all alike? This antiquated conglomeration of announcements wreathed about the dial is read, perhaps, half a dozen times by every one in town, then absolutely forgotten. Don't forget that advertising is news, not history. The hotel register is another snare. Why should you or I with our hard-earned dollars pay for the hotel man's register with a set of microscopic ads. stretching across the top of each page? Whoever scans the register is looking for the name of some arrival, and never reads the announcements that *dis*grace the top of each page. Right here, if you wish to catch hotel trade, secure the privilege of putting up a case of fine pictures in the main hall, then change it often. Bill-boards? I think not. No

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photographer of any dignity cares to see his cognomen in six-foot caricatures! Fence signs? Hardly. Too many photographers on the fence already, without having their names as a running mate to yards and yards of yellow sozodontness. Sandwich men and barkers may do for a 10-cent restaurant or shore tintypes, but never for straight photography.

Now you begin to wonder what mediums are left that are thoroughly suitable for photographic advertising. Certainly every photographer should have some kind of an advertisement in the newspapers, either a modest display ad. or a short reading notice changed at every issue.

Souvenirs? If you have an opening or a reopening, and wish to present a souvenir to your friends, give them something useful, however trifling; but do not attach any reading matter suggesting an advertisement. Remember that the opening is in itself sufficient advertisement for the time being. Reserve such literature as you have in mind for the near future, when it will have more force and give more lasting impression.

And now we come to booklets, the very best direct medium the photographer can use. Some merchants issue thousands of booklets and expect a harvest within three weeks—quite impossible. You never see a wise farmer, who wishes to raise a crop of wheat, rip up the whole landscape and sow all the seed grain he can buy or borrow. No, he tills a few choice acres, and sows no more seed than he can take care of by cultivating and weeding; then after several months he begins to receive returns. Just so with the booklets. The wise merchant issues only a few hundred, according to the size of his town; then follows up with a courteous letter to each recipient, calling attention to the same. Later, if no returns come, send another booklet, even a third, if necessary, for it is better to secure fifty customers from 500 booklets, by careful following up, than to issue 2000 booklets with no attention paid to their welfare, and secure only two dozen customers.

Before issuing booklets carefully prepare a mailing list from the blue book or the directory. Next send each booklet, carefully sealed and directed, to Mrs. ——, not to the "Lady of the house." If you do it is very apt to go the way of cook-books and sample packages of pink pills, unread, into the waste-basket. When a woman opens her mail and discovers your booklet neatly addressed to her, personally, her name correctly spelled, she gives it some consideration; and if the stamp be put on straight she gives it more consideration. Bear in mind that a crooked stamp or an inverted one is just a little discourteous to any woman; also is a slur upon the memory of the dead President whose miniature image graces the same.

Now you have all the printer's ink or direct advertising necessary. But how about the *indirect*, the most potent of all advertising? Gentlemen, I refer to your *pictures*, they are your best advertisement; they will make or unmake you despite the most alluring ads. and the most beautiful booklets ever built.

How often we speak of the present as the age of the specialists. Photography is certainly included as well as medicine and mechanics. We have the artist who makes none but women's portraits; the artist who makes none but men's portraits; the artist who attends to the children's pictorial wants, and he who caters to pets. It is the trend of every trade to specialize, but the patrons of *good portraiture* demand INDIVIDUALITY and PERSONALITY as well as specialty.

Has it ever occurred to you that there are too many pictures just alike? That there is a plethora of photographs and a *dearth* of pictures, due to a lack of art education?

Take, if you will, a hundred photographs from as many studios of good fair reputation. Remove the names, shuffle them, lay them out, and you cannot tell one man's work from another, only as you personally knew that he made such and such pictures. *Lack of individuality* is the reason. *Lack of pictorial qualities* is the reason. *Lack of sound composition* is the reason. All the prints are pretty and pleasing, but lack that distinguishing quality we call pictorialness. In plain English, there is but little genuine pictorial photography done in this country.

For years photographers have worked for tonal effects, which are pleasing, and

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are purchased by many customers. But the effect is not pictorial—does not attract the stranger, does not exhibit more than mere likeness, does not appeal to good judges and wealthy patrons, who will cavil at no reasonable high price if their portraits proclaim the *artist* as well as the artisan. This, gentlemen, is the power of pictorial photography, is the *key to higher prices*.

The first step toward pictorial photography is to secure *tonal values*, which means truth of distance; or, in other words, atmospheric perspective. You have observed that an object which at four feet from the eye is sharp and clear becomes dimmer in outline and color at fourteen feet; still dimmer at forty feet. (By the term color we do not mean the red, blue, or yellow quality, but its *force* of light and shade.) To make this point plainer, an object that is black or white at close range grows less black or white at a few feet distant; still dimmer if removed to a greater distance, and finally at an extreme distance loses all force of color and becomes a neutral gray. Now, what is true of a long range is true of a short range, like a portrait of a head where the planes are only a few inches apart. (But this leads us into deep discussion, which time forbids, and which must be led up by preliminary instruction. Hence this is just the quality, *tonal values*, that you must incorporate in your pictures. It is the first step toward pictorialness.

Composition is the next step to secure pictorial effects. It is to picture-making what architecture is to carpentry—what authorship is to the reportorial. It is the all-important point in picture-making, and the least understood by photographers.

The average photographer considers composition an arrangement of *pleasing lines, lights, and shades*. Quite to the contrary. It is a *pleasing arrangement* of lines, lights, and shades. And when the photographer is familiar with these qualities —tonal values, composition, etc.—and can produce a portrait that will enlist praise and admiration from the stranger he may rightfully claim the title of *artist*.

There is no doubt as to the wide appreciation of the masterly criticism photographers have received for several years from such able men as Professor Griffith, Taft, Enneking, and others; but instantly you ask yourself how are we to apply these excellent ideas to our everyday work? Your case has been thoroughly diagnosed, now you need careful doses of *pictorial* medicine. Art, you know, is a good deal like religion—you may catch the fever and have the power in a multitude, but your own salvation you must work out by yourself with a pastor and a master.

Higher prices for your products and *higher social standing* are the fruits of such labor when the artist in you leads the artisan in you; when your INDIVIDUALITY rules your craftsmanship.

Isn't this noticeable in all vocations? Why does Vanderbilt's *chef* command a higher salary than the country hotel cook? Very true, Molly O'Foggerty can whack a boiled dinner together that will tease the tongue of the bucolic justice; but Monsieur de Bouillon can take the same materials and build a salad that will uncork the best wit from such minds as Chauncey Depew and others! Why? Because he put art in his dish, while Molly mixed ardor with hers.

You ask, "Does it pay to spend several months or a year to perfect yourself in art principles?" In other words, is photography a fine art? Before I answer this question I will ask three others. Is painting a fine art? Yes, if a fine artist mixes the colors and applies them to the canvas. Is sculpture a fine art? Yes, if a fine artist chips the marble. Is music a fine art? Yes, if a Paderewski animates the ivories, or a Paganini draws a beguiling bow, or a matchless Patti vocalizes the notes. Is *p-h-o-t-o-g-r-a-p-h-y* a fine art? YES, if a *fine artist* controls the lens; if a *fine artist* develops the plate; if a *fine artist* prepares the plate, and a *fine artist* prints the same. Then photography is a fine art; otherwise, a craft taking years of hard study to master.

We know it is an excellent practice to meet in convention each year to exchange ideas on technique and manipulation. Beware, however, how you copy each other's ideas of lighting, attitudes, and composition; it only keeps you farther from the artist's goal. Constant copying hides only the deeper your individuality. Certainly,

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"one must imitate before he can originate;" but is that any reason why we should forever creep on our hands and knees?

Arise—and see the shining horizon! Read more good books; hear more good music; study true picture-making, but don't, don't imitate—the rut grows deeper and your creative sense dimmer. Walk with me down one of the side streets where cheap gravestones and architectural images are cut. There sits a greasy little fellow pecking away a piece of porphyry. He is making a cherub. What! that ugly little image an angel? One look is sufficient. Now march with me over to your magnificent museum. There, in an alcove, is a plaster replica of the head of Zeus, one of the greatest, if not the greatest, pieces of statuary ever made. One look is not sufficient. Neither was it sufficient for the ancient Greeks; for history says, "This statue had the power of dispelling grief and sorrow." That those who approached it heartsick and mind-laden, left its presence with sunshine on their countenances and a new hope for the morrow.

What a contrast! The miserable little effigy in the side street is a mechanical piece. The magnificent head of Jupiter is a *masterpiece*. The difference is this: One is by PHIDEAS—the other is *perfidious!*

Again, so many photographers seem completely carried away with the fact that a negative can produce innumerable copies. "Oh," they say, "if I can only get the negative in such and such a condition I can turn off thousands of duplicates."

Alas! what folly! What a leading away from the coveted goal! It were better a negative be limited to five or ten copies, and the plate destroyed; for then would *better* pictures be made, *higher* prices be paid, and *more respect* given to the profession of photography.

Let me sketch two other scenes.

Off down there on the coast, where they are squeezing cod into boxes, stands a burly son of Erin, with a stencil. With muscle and a few strokes of the blacking-brush he has made a very credible outline picture on the end of a box. He glories in the fact that he can duplicate the same every moment. Over here in college, where they are arranging drawing-boards and easels, stands an eager student with every fibre of brain and brush alert to catch some of the matchless beauty of a celebrated cartoon that hangs upon the wall. The coast picture represents a scene in a packing-house—men putting down fish. The college picture represents a scene in Palestine—men also putting down fish, but at the feet of the only true and perfect Man that ever lived; beyond the astonished Apostles is the hungry multitude; on the ground, the five loaves. The coast picture is simply a mechanical piece, forgotten the day it was made; the college picture is an immortal *masterpiece*, and will never grow dim in the memory of man. The difference is in the men who made them. One—is by Michael—Delano; the other—by MICHAEL ANGELO!

"COMPOSITION: A NECESSITY."*

BY OTTO WALTER BECK.

MR. PRESIDENT, LADIES AND GENTLEMEN: Meeting with you to-day gives me great pleasure. Familiar faces recall to my mind the convention of 1895, held at Columbus, Ohio. It was my first attendance at these yearly gatherings of photographers, and I was present for the purpose of serving on a jury that was to select pictures for the first salon. There were three of us entrusted with this task. We felt the importance of the work, as we were conscious of the influence the first leaning toward art must have on photography—a step that must in time lead to art—the camera used intelligently being the tool.

The jury was composed of artists only, and we felt the good that would come to

* A lecture delivered at the Ohio-Michigan Convention, 1902.

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all art if photography could be instilled with the new life that comes with art. There were two distinct objects in view. The first was, that the photographer could infuse art into his camera work; that he would benefit by it in the pleasure and the profit to be derived out of it. The second —an equally important point to be gained —was the influence of art-photography on the people. Photography is to be "the art of the people," and professionals will prosper in the ratio in which they cultivate the masses. All the other arts can better live with improved photography.

Let the people understand what good photography is, and let the photographer study art that he may keep ahead of the people in the excellence of his work. With this in view we met the complicated problem. All the pictures on display were in set sizes and shapes, such as the cabinet, etc. The mounts were also of one type. This seemed to us the most formidable barrier photography had to meet on its newly taken path toward art. This uniformity in size and mounting made the photograph of second importance and the manufactured supply the first. We found that both the photographer and the manufacturer could profit by a reversal of this principle. If the portrait aimed at could be made the first condition, and the size, shape and mounting supporting influences, then there would be health and possibilities in the plan. We found first of all that, owing to the set sizes, the figures were surrounded with background material in such confusion and abundance that the background often became of greater interest than the figure or the face. The idea came to us at the time to cut out some mats and place them over some of the best prints in such a manner as to set off the figure well, and to cover the harmful parts of the backgrounds. The pictures thus treated were incorporated, with other highly gifted works, into the salon.

When the next session of the convention was called, immediately after the completion of the salon we were surprised to find objections raised to the including of the improved prints in the salon. The jury was taught a lesson in diplomacy, but at the convention of 1896 it was evident that the members of the convention had gained a lesson in art, for the cabinets were in the minority and the well-trimmed picture had become established. In this way lessons in art are usually taught.

We have further strengthened our art movement since 1895 by urging simplicity in backgrounds, by taking out wild accessories and using only that which will give the light and dark of the figure a favorable condition for portrait effect. In my experience as a lecturer before conventions I have found that the deeper truths of art would be rejected one year and taken up the next; that in course of these seven years photographers have come to realize that "good straight photography" is but a preliminary process; that "treatment" is coming to be the watchword. These seven years have trained not only the photographers, but the artists who were called in by them to help in the struggle of photography toward art. No one has been injured thereby. The manufacturers are supplying better plates and better papers, and even the background man is in the field. His business may yet outlive the passion we now have for extreme simplicity in the background, and he may furnish us with even better grounds having good, interesting, and helpful forms in place of the wild and unfitting ones sold in the past. The progressive photographer has gained; he gets higher prices because he reaches a public trained by foreign travel, and the artist has gained, for his public has grown less literal in its taste. All three—the photographer, manufacturer and artist-instructor—are now face to face with the fact that "art in photography" must be approached by the way of "composition."

In these illustrations that I have brought to show you to-day I will point out how true this is. For instance, in this print showing a woman in a dark dress, posed beautifully and supported against a simple dark background, our photographer came to the conclusion that the chair upon which the woman is seated was too obvious, and should be cut away. He did so, and the result is that the space in which the woman is now to be forever and a day is too small for her. It makes her appear crowded, imprisoned for life, and all her loveliness is turned into a distortion extend-

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ing over the whole photographic print and especially noticeable in the face, where we find the photographic stare. How unfortunate this is, and yet it is like 99 per cent. of the pictures in our show cases.

Now in this second picture I show you the same woman in the same pose, and the chair retained. No part of the background is trimmed, but the background has in it forms and movements consistent with the composition elements of the figure. What is the result? This woman feels "right" in the picture; she feels at home; she is our friend; we are in direct relation to her. She is not self-conscious, but is oblivious of being on show. She lives in her picture. And do you notice that the facial expression is fine, quiet, "soulful?" Thus we have proof that soulfulness is only attained by true picture quality; that the background, rightly treated, is as vital a part as the face itself; that trimming has been only one step in our progress toward art, and that the one great duty that remains to us to-day is to learn how to "build up" a picture. This means art study.

The lecturer then went through art problems of the most varied kinds, showing in each how our every-day product could be turned into æsthetic work, and showing by actual prints that it is possible; in fact, that in the year's work the ideas he has set forth are "working ideas" on Fifth Avenue and are the foundation of the business success of many leading men of the profession. Continuing, he said:

A word about our yearly meetings. Photographers have these conventions all to themselves. Their good and bad pictures are all mixed in the display, and the salon is a little crowded box where the artistic qualities die. If the policy were changed, if photographers would choose the best pictures of the year's work, hang them in rooms built into the convention hall, each room a copy of a modern dwelling in the best taste, the professional photographer would see his work as it can be used in the home; he would learn to work for effect. A picture that is to be on the wall should be made to carry at a distance of from four to ten feet, and it should be a good decorative spot. A picture should be made to look right on our modern light walls. Photographers should study to make their work look well upon the walls having the colors now in vogue—even wrestling with the Morris wall-paper.

Again, photographers should display at their conventions portfolios in well-shaped frame cases, such as people could buy and use in their homes. Certain pictures look well only in portfolios, and the professional must learn to see the difference. A convention having a display of this kind would educate its members having small opportunities at home, and all would be greatly benefited. Further, at such a convention, on several days following the regular meetings the pictures and portfolios, well guarded, should be thrown open to the city and the people to impress upon them the strength of each year's advance.

We must educate ourselves and the people. It is "business" to do so. The other day I happened in the art store of Hanfstaengl, on Fifth Avenue, New York, to look at photographic reproductions of old masters. It occurred to me while looking over these hundreds of wonderful prints that the average photographer had never seen a fine reproduction, those coming to his notice being but blackened half-tone reproductions. What an educational influence would come from a display of the best photographs from such a firm at our annual conventions. Artists who attend the conventions could then explain the composition upon which the old masters built their portraits, and a comparison with our own products in photography would be enlightening for the reason that we would see the difference between art and the absence of art, the science that underlies art, and the "chance" that is the weakness in our present photographic work.

THE photographic concession at the St. Louis World's Fair of 1904 has been secured by former Congressman William Lorimer, of Chicago. According to his contract he is to pay the World's Fair Commissioners 30 per cent. of his gross receipts for the photographic privileges. It is estimated that the concession will net Lorimer not less than $500,000 profits.

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PROFESSIONAL PHOTOGRAPHY, ITS NEEDS AND POSSIBILITIES.*

BY C. S. BATEHAM.

I HAVE no intention of inflicting upon you a long speech—the kind once described as containing nine-tenths flummery and one-tenth sound sense. Your Executive Committee has engaged speakers who will fill the time on our programme with talks full of sense on subjects of practical use to each one of us engaged in the photographic art. I almost said business, but in view of recent achievements photography is now fully entitled to be designated as an art. The St. Louis World's Fair Commissioners have given it official recognition as such. They have listened to its continued knocking at the portals of art, and, deciding that its claims for admission were too strong to be longer ignored, they have announced that art photography will be given its rightful place among the fine arts in the Art Palace. Quoting from their circular: "Admission will be confined strictly to such art work in photography as may satisfactorily pass the critical inspection of the National Jury of Selection of the Department of Art."

This is as it should be. Keep the standard high. We only ask that when works of art are produced by photography they shall be recognized as such, just as much as when done by brush or pencil. This step is a long stride in the advancement of photography, and the earnest workers in the profession should bend their energies toward producing pictures of such high merit as will compel their acceptance, and thus make our position in the world of art secure. We can scarcely overestimate the advantage gained. It will give dignity to our profession and a place in the estimation of the public that has not heretofore been attained.

Colonel Ockerson, of the World's Fair Commission, in an interview for a prominent newspaper, recently said: "With the opening of the St. Louis Exposition photography is to be advanced to a higher plane in the scale of civilization. It is the first time that the photographic art was ever classed as a fine art in this country, but undoubtedly some photographs are works of art, and these we have decided to put in the Fine Arts Building."

The opportunity should be improved to the utmost, not only by personal endeavors to produce pictures worthy of acceptance, but also by a concerted action of our Association to see that we are properly represented at the St. Louis Exposition in 1904. I think that a committee should be appointed at this convention to co-operate with the National Association in securing all the honors possible for our profession.

Regarding co-operation of associations, I feel that I am geting in rather deep water when touching on this subject, but the experience of the last four years in active work for our State Association has impressed me with the difficulty of maintaining the membership on its present basis. Each year it seems to be an increasingly difficult undertaking to get the ones who should be interested to send displays of work and attend the convention. Prizes failed to interest most of our members, so we fell into line with the no-prize idea this year, offering only three cash prizes, primarily for the purpose of attracting outside exhibits and creating a contest that would add more interest to a no-prize convention. I think, however, that you will find more exhibits, even from those outside our States, that are merely sent to us as a compliment than there are of those entered for the prizes. This seems to show, to my mind at least, that the leaders in our profession throughout the country are ready and willing to do much for the general advancement of photography regardless of direct inducements—that they are ready to co-operate for the good of the cause. Co-operation is the order of the day, and it seems that the idea of a closer union of all the associations is in the minds of photographers in different parts of the country. There are many differing ideas regarding the best way to accomplish

* Being the President's Address, delivered at the Ohio-Michigan Convention, 1902.

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this desirable result. Mr. Edmondson, President of the National Association, advocates the plan of State associations holding their meetings one year and the National being held in the alternate year. Others favor the National Association being a sort of Grand Lodge of the State organizations, the officers of each association of a State or group of States being delegated to attend the National Association, and vote for them in the business connected with that organization. For those States which have no local organization the National Association would appoint delegates to represent their territory.

This plan would have the advantage of improving the business meetings of the National Association and prevent the possibilities of deleterious measures being passed by anyone who can talk well and command a few followers. It is a well-known fact that there is constant danger of this in any of our business meetings conducted under the present loose organization. To do more effective work there must be better organization. Some think that in order to accomplish this we should commence at the bottom and restrict the membership in our State associations so as to prevent the admission of quacks; those who bring discredit to the profession by their unprofessional business methods. There are many good men who will not take any active part in National or State associations so long as this class are permitted to attend and use the information gained to further their ends. It is undoubtedly true that there would be a freer interchange of ideas at our conventions if all could feel that there were none present who would be likely to make improper use of the knowledge thus gained.

These ideas have been discussed in private for many years past, but never brought out in public meeting for fear the time was not yet come. It seems to me, however, that open discussion can do no harm, and I think that a plan combining the best features of these ideas should be brought before this convention, and at least an expression of opinion obtained. A closer union of those who have the welfare of their profession at heart is bound to be productive of greater good. No man ever did or can do a great work alone; he must be backed up by the admiration of some sympathetic friends. As William Morris said, "Fellowship is Heaven, and lack of fellowship is hell. Some one must believe in you. Self-reliance is very excellent; but as for independence, there is no such thing. As one must win approval for himself, so he must receive corroboration from others. By working for the good of all we work for the good of ourselves, and we only succeed as we work for the good of the whole." There never was a time when there appeared such a bright future for our profession as there is at the present time. Shall we not take active steps to improve our opportunities, and by mutual co-operation and with higher aims advance the standard of our art to the utmost of our combined abilities?

I believe this to be a critical time for art in our profession. We have passed through the era of impressionism, and are now entering upon what seems to be a happy medium between the crude work of the past years, when chemical effects were the chief aim, and of the fuzzy, uncertain things, on the other hand, which did not do justice to either photography or art. It remains for us now to study carefully the fundamental principles of art. I believe we cannot get too much of it, and for this reason we have secured the best talent obtainable to instruct us on these lines at this convention—men who have made it a practical study for years, and who know our needs and limitations. I do not want to give the impression that art knowledge is the one thing needful, however, as good business methods are just as important for our success. The two should go hand-in-hand. The world of commerce is just as honorable as the world of art, and a trifle more necessary. Business means making things that people want, and the business method is the expedient way of doing things—that is to say, the best way.

To be a business man implies that you are orderly, systematic, exact, competent, reliable; that you keep your promises (and expect others to do the same); that you are on time; that you pay your debts; that you give employment to others, and see that they do their work properly and well.

Of course, there are men who have be-

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come so thoroughly immersed in the business side of it that the development of the art side of their nature has been unduly restrained, but a man of this kind is surely no worse than an artist who scorns the business part. In the union of the two lies success. Let us look to our work and make it of such quality that the market must come to us, and having come let us see that we treat it in a business-like way.

TONED BROMIDE PRINTS AND PERMANENCY.

As soon as any printing process becomes popular the photographer is seized with a desire for variety. It matters little to him that many methods are dependent for permanency on a very delicate adjustment of treatment and material. Not a little trouble has been caused by this experimenting after new things; it is not more than a decade ago since more than one promising printing paper courted and met financial disaster on the rock of combined bath. Without experiment and some risk we would never progress, and it is better to be brought up sharp once in a while than to fall into a lethargy.

Bromides have not missed the fate of all papers, and many pleasing variations of the standard tones have been obtained. Of these the most popular tones have been those obtained with uranium—and the result has gone to show that uranium leaves much to be desired in the matter of permanency. We have just received a batch of uranium-toned bromides, some of which show trouble. A gray metallic deposit is one fault, and it occurs on a couple of prints from the showcase. There does not appear to be any sufficient reason why toned bromides should be abandoned if only moderate permanency is required, but a uranium-toned silver image will never be of a guaranteeable permanency.

The fading or mottling of these prints has been attributed to the presence of ammonia in the air; but experiments tend to disprove this except where the atmosphere is much more humid than in this country. It was, we believe, Dr. Katz, of Charlottenburg, who laid the blame of fading on the mountant. He experimented with many kinds, but found a universal tendency to fading, sometimes immediately the print was mounted. He was unable to discover what ingredient caused this fading, but he discovered a preventive in mixing a little of the uranium intensifier itself to the mountant. Fresh intensifier was preferable to that which had been used. If the print has been toned properly the metallic deposit can be avoided by waxing the print.

The chemical changes during the toning of a bromide print are very intricate and involved. For the amateur who wishes for a "pleasing tone" on his exhibition print the process is to be commended. But now that we have told our correspondent how to avoid the special trouble which has worried him, we would suggest that bromide paper, if properly worked, is better than if dabbled with, and that if novelties are sought it will be better, from the business side, to seek them in some other direction.

"WINNERS of 1902" is the title of an attractive booklet just received from the Voigtlaender & Son Opt. Co., New York. It is profusely illustrated with instantaneous photographs of athletes, from photographs made by W. U. Jennings, of Philadelphia, and clearly shows the advantages of the Collinear lenses for this difficult branch of photographic work. Copies of the booklet can be had on application to the Voigtlaender & Son Optical Co.

MESSRS. Tennant & Ward, publishers of *The Photo-Miniature*, offer an award of $25 in cash for the best answer to the following question: "Is *The Photo-Miniature*, No. 29, Flashlight Photography, better than *The Photo-Miniature*, No. 30, on Photographing Interiors, or vice versa?" Plain reasons should be given, preferably on a postal card. The contest closes November 25th, and the award will be announced in the photographic journals. Every professional photographer should read these two very practical little books and, if read wisely, their reading within the next few weeks may be turned to probable profit.

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OUR PICTURES FROM THE SALON.

By the courteous help of President Chas. W. Hearn we are able to place before our readers a careful selection of the best work shown in the New England Salon of 1902. The collection from which our pictures was taken was in itself selected from a larger body of American and European work submitted to the Salon jury. Great praise must be given to Mr. Hearn and his fellow-officers of the New England Association for the work involved in securing this international display. As our illustrations plainly demonstrate, American portraiture still holds the first place despite the excellent work done abroad.

The following list comprises those photographers whose work was accepted for exhibition in the Salon of the Boston Convention. The figure after each name indicates the number of pictures hung:

Anselm, M. W., Russia	1
Appleton, J. M., New York	3
Baker, Harold	2
Bateham, C. S., Norwalk, O.	1
Barrows, F. R., Boston	1
Bachrouschin, W. B., Moscow	2
Barnett, H. W., London	1
Boissonnas, F., Geneva	2
Dubreuil, P., Paris	1
Duhrkoop, Hamburg	2
Ecalle, G. C., Paris	1
Edmondson, G., Cleveland, O.	2
Flodin, Ferd., Stockholm	1
Partridge, W. H., Boston	1
Pierce, H. H., Providence	1
Spellman, D. D., Detroit	1
Parkinson, M. B., Boston	1
Van Norman, G. H., Springfield	1
Stein, S. L., Milwaukee	1
Holden, Alfred, Philadelphia	1
Field, J. H., Berlin, Wis.	1
Tingley, G. E., Mystic, Conn.	1
Schervee, H., Worcester, Mass.	1
Hofmeister Bros., Hamburg	2
Pike, C. C., Indianapolis	1
Porter, J. W., Youngstown, O.	2
Marshall, W. E., Arlington, Mass.	1
Werner, Alfred, Dublin	1
Moore & Stephenson, Atlanta	1
Albany Art Union, Albany, N. Y.	1
Soladornikoft, K., Russia	1
Holman, S. M., Attleboro, Mass.	1
Latimer, H. A., Boston	1
Hastings, G. H., Boston	1
Johnstone, C., Hartford, Conn.	1
Strauss, J. C., St. Louis	2
Hamnquist, Stockholm	1
Hertzberg, John, Stockholm	1
Rahmn, A. W., Boras, Sweden	1
Lenhert, H.	1
Crooke, William, Edinburgh	1
Bequin, F. Mamur, Belgium	1

Two pictures from the complimentary exhibits of Dudley Hoyt, of Rochester, and one from the exhibit of Chas. W. Hearn, of Boston, were recommended by the judges as possessing attractive merit, and worthy of a place in the Salon.

The Conley Camera Co., Minneapolis, Minn., offer a silent shutter for photographers which should win instant popularity. This shutter meets a universal want of long standing, and is almost indispensible for photographing children and nervous sitters.

Photographers who have prepared work for the Eastman $4000 competition are reminded that this competition closes November 15th.

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NEW ENGLAND SALON, 1902

By H. H. Pierce, Providence, R. I.

Sepia Platinum, 4¼ x 7½, *on paper* 10¼ x 16

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NEW ENGLAND SALON, 1902

"The Children's Hour"

By WILLIAM CROOKE, Edinburgh, Scotland

Platinum, 16½ x 23½

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NEW ENGLAND SALON, 1902

By K. Meiche, Lausanne, Switzerland

Gumbichromate Print, 5¼ x 7½

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NEW ENGLAND SALON, 1902

By Alfred Werner, Dublin, Ireland

Sepia Platinum, 5¾ x 8

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NEW ENGLAND SALON, 1902

By W. E. Marshall, Arlington, Mass.

Sepia Platinum, 6¼ x 9¼

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NEW ENGLAND SALON, 1902

"The Black Sea"

By W. Bachrowschin, Moscow, Russia

Gumbichromate, 6 x 8½

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NEW ENGLAND SALON, 1902

"Ein Geistlicher"

By R. Duhrkoop, Hamburg

Gumbichromate, 4 x 5⅝

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NEW ENGLAND SALON, 1902

By W. H. Partridge, Boston

Sepia Carbon on Toned Etching Paper

10½ x 16½

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NEW ENGLAND SALON, 1902

By H. Hamnquist, Stockholm, Sweden

Gumbichromate, 11¾″ x 15½

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NEW ENGLAND SALON, 1902

"Summer Morning"

By THEO. and O. HOFMEISTER, Hamburg

Gumbichromate, 26½ x 37

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NEW ENGLAND SALON, 1902
"Vor der Elbe"
THEO. and O. HOFMEISTER, Hamburg
Gumbichromate, 8½ x 36

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NEW ENGLAND SALON, 1902

"The Violinist"

By H. Walter Barnett, London

Sepia Platinum, 6¼ x 6½

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NEW ENGLAND SALON, 1902

"Charme delicieux"

By PIERRE DUBREUIL, Lille, France

Gumbichromate, 7½ x 9¼

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NEW ENGLAND SALON, 1902
"Les Colchiques"
By F. Boissonnas, Geneva, Switzerland
Carbon, 6¼ x 15

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NEW ENGLAND SALON, 1902

"The Haven"

By W. Anselm, Russia

Original Print, 6½ x 10½

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NEW ENGLAND SALON, 1902

Ely Cathedral, England

By Harold Baker, Birmingham, Eng.

Sepia Platinum, 6 x 8

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SIXTH ANNUAL CONVENTION OF THE PHOTOGRAPHERS' ASSOCIATION OF NEW ENGLAND.

Boston, August 20, 21, and 22.

It was our intention to have published the official report of the New England Convention *in extenso*, as promised in the last issue. As the report came to hand, however, it was seen to be so lengthy, and to consist so largely of papers read before the Buffalo Convention (published in our September number) that, in justice to our readers, we present simply a digest of the proceedings of the Convention, with reproductions of some of the best pictures shown in the salon. We desire to record our sincere appreciation of the help given by President Charles W. Hearn, and especially his courtesy in selecting the pictures we have reproduced.

The Convention was called to order at 10.30 A.M., Wednesday August 20, by President Hearn, who, after inviting any ex-Presidents or State Vice-presidents in the hall to come up on the platform, formally declared the Sixth Annual Convention of the Photographers' Association of New England open and ready for business.

The Mayor of Boston being unable to welcome the conventioners as arranged, an address of welcome was given by Mr. Morris Burke Parkinson, a well-known Boston professional. Mr. Parkinson's address was in his usual happy vein and put the meeting in a thoroughly good humor.

Telegrams and letters from the editors of several photographic journals, prominent photographers, and manufacturers were read by Secretary Bolton. Mr. Bolton, on behalf of the Executive Committee, then presented to President Hearn an ebony gavel as the emblem of his office and as a souvenir of his administration of the affairs of the Association.

President Hearn then delivered his annual address, giving due acknowledgment to the very cordial support that he had receivd from the members of the Executive Board and by the various State Presidents. He paid a special tribute to the thoroughly efficient and hard work of the Secretary, to whose efforts, in every sense, much of the success of this Convention was due. He mentioned that much of the success of the Association in the past has been due to the occupant of this official position on the Executive Board, and strongly urged the fact the compensation should be raised to 10 per cent. of the gross receipts, so that it would in part recompense future Secretaries for the necessary labors which they must perform. He recommended that steps be taken toward the closer union of the various State Associations with that of the National, calling attention to the fact that the success of the State Associations throughout the country was largely owing, during the last few years, to the cordial support that the National officers have always given to them, and mentioned the fact that the collection of pictures from this country which was exhibited here at this Convention was only possible by the moral and official support given to him and the Secretary at the recent Convention at Buffalo. He mentioned the fact that the officers of the various State Associations then in the city of Buffalo held an informal meeting for the purpose of discussing ways and means which would tend toward the success of each other as well at that of the parent of them all, the National Association of America. He asked the approval of the P. A. of N. E. of what seemed to be the first steps toward an organization of the various State with the National Association, which was the adoption by the National of an official magazine of that body, the first issue of which was to come out prior to the next Convention and to be devoted solely to the interests of the photographers throughout the country. The incorporation of the Association was recommended, with trustees to be appointed, whose sole duty would be to act for the Photographers'

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Association of New England, so that at the next meeting of the State Association officers at Indianapolis action could be taken toward the close welding of all Associations as may be deemed best at that time. He mentioned that the Executive Board had taken steps, this year, toward a closer union of the amateur and professional, and had invited exhibits from the amateur class as well as the professional. They had also made applications to representative amateur and professional photographers throughout the various countries of Europe to contribute pictures for this Association so as to make this exhibition international in its character, and it met with such a cordial response that work was exhibited upon the walls from England, Scotland, Ireland, Wales, France, Germany, Belgium, Russia, Norway, Sweden, Austria, Switzerland, Canada, Mexico, and also the Hawaiian Islands, that were exhibited for their education. At the conclusion of his address, President Hearn returned thanks in behalf of the Executive Board to the various parties who had assisted them in obtaining this collection.

Mr. Tingley: Mr. President, I desire to make a motion that a committee on resolutions be appointed by you for this purpose, to report at a later meeting. Motion carried.

The President: This and other committees will be appointed during the afternoon session.

The morning session then adjourned.

Wednesday Afternoon Session.

President Hearn called the meeting to order at 2 P.M.

President Hearn: I have great pleasure in presenting to you to-day Professor O. W. Beck, Brooklyn, N. Y., who will give us a helpful talk on the "Art Possibilities in Commercial Portrait Photography To-day." I bespeak your careful attention to his talk. I had the pleasure of hearing him week before last at Buffalo. He is about to publish a book, the manuscript of which I looked through at his request in Buffalo, and which is now practically in the press. This will be found to be indeed a primer of artistic photography. The National Association at Buffalo passed resolutions endorsing this book, and various members subscribed. The book is exceedingly valuable, which you will hear about later on. I have the pleasure now of introducing to you Professor O. W. Beck.

Professor Beck then delivered a lecture on "Art Possibilities in Commercial Portrait Photography To-day." This address was given in full in our September number, as delivered at the Buffalo Convention.

President Hearn: I now have the pleasure of introducing to you a man whose writings have been of great value to us, and whom we all have had a desire to see. I do not know whether he is as witty as his articles are or not. I introduce Mr. Charles P. Marshall, who will address you on "Advertising and Pictorial Photography the Key to Higher Prices." Mr. Marshall's paper is given as a separate article on another page.

The President then appointed several committees on nominations, resolutions, the annual dinner, etc. Before adjourning President Hearn called attention to the demonstration of carbon printing by the expert carbon printer, Mr. A. R. Browne, of Boston.

In the evening a complimentary entertainment was given to the photographers by the manufacturers and dealers. This consisted of a concert by the Boston Festival Orchestra, and was very much enjoyed by every one present.

Thursday Morning Session, August 21.

A demonstration of carbon printing was repeated by Mr. A. R. Browne to a very large attendance, and those present were much interested in his methods and information. Mr. H. M. Fell, of the American Aristo Company, then gave a demonstration of the best methods of making prints upon Aristo-platino and Collodio-carbon papers, which was much appreciated.

At 10 A.M. the ladies attending the Convention were given a two hours' trolley ride to see the city of Boston from observation cars.

The regular session was called to order at 11 A.M., when President Hearn read the following communication: "The jury finds artistic merit in several compli-

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mentary exhibits of sufficient value that they deem it just these pictures be placed among the salon pictures." *Signed:* W. Edmondson, O. W. Beck, Dudley Hoyt. Two of these pictures were made by Mr. Hoyt and one by Mr. Hearn. They were not, however, placed in the salon.

Mr. George Hastings then made an address, asking a resolution of special thanks to the Committee on Entertainments for the enjoyable evening given the photographers on Wednesday. A vote of thanks was given to Mr. W. A. French, as chairman of the committee, with much enthusiasm.

Secretary Bolton addressed the meeting, urging a permanent home for the New England Association. His motion supporting this was carried, and the President appointed a committee to talk the matter over.

President Hearn addressed the meeting to express his appreciation of the help he had received from the executive officers of the National Association, and he then introduced Mr. H. A. Collings, the First Vice-president of the National Association, who delivered a brief address.

President Hearn: I have great pleasure in introducing to you now a gentleman who ranks very highly in the art circles of Boston, Mr. J. J. Enneking, who will talk to us upon the "Relation of Art to Photography."

Mr. Enneking in his address mentioned that while appreciating the fact that photographers had to deal mainly with the public, he wanted to impress upon them that they must do as the old Pharisee did —that is, to give a tithe to the Lord; in other words, advised us to give one-tenth of our time to art. He thought that the future of photography was very encouraging, and after looking at the foreign exhibit, and speaking from his knowledge from previous visits to Europe, where he had studied the best things done there, he thought that America had no reason to blush, and that we were fully equal if not superior in the work made here to that made in any part of the world. He said that the very first suggestion of art on the frontier is a photograph on the wall, and from that fact he feels that photography has much for her encouragement. He had not the slightest doubt but that Carnegie, who has done so much and is doing now for the advancement of art, started with photography. Also that photography had tremendous educational powers in all directions. By its aid the finest things made all over the world are reproduced, so that it brings light to the people of the poorer classes, the very people who want to learn what is the very best that the world can produce. Photography is the medium, and good reproductions of famous paintings which have been made by this means alone have done much toward the uplifting of the photographic art. He was delighted to know that the Association was prosperous and that we could go so far as to think of building photographic institutions. There are art colleges and art exhibitions, and he wished to say that the nearer you get to art, to the very finest, the purer you get. There is no doubt that in order to produce something fine you need training—that is the great lack of the photographer—the natural man is bad; a little man who is trained will knock out a big man unless he knows how to use his forces. So it is with you. In order to be able to produce something fine you must know what the material in front of you presents; you must know what possibilities there are in the materials you are dealing with. That is where your organization ought to take a stand; see that you have night schools for art training (if you cannot go in the day); that you have men who will train you—they cannot teach you art—they do not teach art in Europe. My teacher never taught me art; where art commences speech fails—it is something like love; where love commences speech fails. As far as learning is concerned, you need less of it than the artist, as the machine helps you and does for you what the artist has to struggle with promiscuously. You have possibilities in photography that the artist can never have. You can take an inferior painting and make a reproduction of it, and if you are an artist you can make it such that it seems as though it was taken from the greatest painting. I have been surprised when I have seen the finest reproductions of the earliest pictures, and when I hunted the originals up I found them to

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be very inferior. I felt that if I could not get a reputation by painting pictures I would get a photographer to make me a a reputation. Every artist has to work for his ideal, and that ideal must be, as a rule, entirely individual.

Mr. Parkinson: I move we pass a vote of thanks for this excellent address. It was carried.

On the motion of H. A. Collings, the names of W. H. Robey and W. A. French, who have recently retired from the photographic stock business, were added to the list of honorary members of the Association.

At mid-day the photographers separated to attend practical demonstrations in lighting and posing, at the studios of Messrs. Garo, Parkinson, Hoyle, Conley, McCormick, Partridge, and Armstrong. These practical demonstrations under the skylight were most heartily appreciated by those who participated, and it was agreed that this feature was the most useful item on the Convention programme.

Thursday Afternoon Session.

After the session had been called to order by President Hearn, Mr. Holman addressed the meeting, asking that the salon be divided into two departments, one for work of pictorial and artistic merit, the other for straight photographic work. This matter was discussed at length, but definite action was postponed until some future time.

Professor Hearn then read a letter from Mr. Julius Strauss, of St. Louis, who had sent several prints of groups for the pleasure of those attending the Convention. These groups included G. Cramer, M. F. Steffins, Pirie McDonald, H. Schervee, J. C. Strauss, and others well-known to the fraternity.

President Hearn then introduced Mr. H. M. Fell, of the General Aristo Company, who addressed the meeting on "Successful and Unsuccessful Business Men I Have Known." A digest of this speech, as delivered by Mr. Fell at the Ohio Convention, appears on another page.

Mr. Morris Burke Parkinson followed Mr. Fell with an address on "The Idiosyncrasies of the Customer and a Word about Faking." This address, as given by Mr. Parkinson at the Buffalo Convention, appeared in our September issue.

Mr. Parkinson's address was followed by a talk on "Ideals in Art," by Professor Griffith, of Detroit. This address, although of considerable length, was listened to with much interest. We content ourselves with a brief extract:

"There has been a suggestion that you have two salons, one for the artist and the other for the photographer. The one for the photographer is intended for the man who makes his living out of the portraits of people who come to sit for him, while the artist is a man who lives on bread and water in the garret; I do not take any stock in them. I do believe you should have two salons, because I believe that when one is displayed it will enable the photographer to grasp the other. Can you take me anywhere and show me the artist who paints always the thing he wants to paint? You will not find one man in fifty who is not painting for the dollars; he is painting the people for their dollars. Once in a while he pulls himself together and he paints something he wants to produce, and he does not care whether any of the boys do it or not; these are the pictures that you produce for the prizes for the salons. It has been only a few years since people could not sell anything but prints made on the old glossy paper; to-day you cannot sell those pictures at any price. Who is to blame for it? The photographer, because he introduces a new line of work. Your patrons and the people in general are just as good judges of photography as you make them. If you make good pictures they will have good pictures, and if you do not make them some other man will come in and make them, and you will get left; so it is, after all, a matter of your own education. I look around this collection, and I compare it, in my mind's eye, with the exhibitions of four or five years ago. Three years ago I came into this hall, and you could go around and pick out six or seven photographers who stood so high above the others that everybody stood in awe of their pictures; now the little fellows have come up to the big fellows, and there is a better grade of work.

"To-day you have heard Mr. Enneking

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talk; he asked me to go to his studio with one or two others, and I did. We went into a beautifully lighted room where there were collected a mass of pictures, and as he pulled out one after another he said: 'I started this one or two years ago; I never have been able to get anything I want out of it. I am not satisfied with it, but next year I believe I will have a picture out of that which I can send to an exhibition.' You say: 'That is the story of an artist who is willing to live in a garret,' but he turned around and said: 'This is my pot-boiler; this is how I make my living.' That is the man who made a name twenty years ago; the photographers, I know, who made a name twenty years ago, have stopped; you do not hear of them now—they simply stopped mid-way in the air and then dropped back again. Sentiment rules the world; the thing of all things that makes a man great is the soul of thing. The machine has no soul; the man who directs the machine must put soul into it; the man will say, I am dreaming a picture, and I will put into that picture something of myself; the artist says there will come from under the brush something that comes from the finger-tips of myself—and the photographer can do the same thing. There are a whole lot of pictures that should be good that simply fall short of being great because the artist did not study them, and there are a whole lot of pictures that are great, but you will never get them save by study. When Mr. Hollinger went to New York he struck out a new line of work for himself, and he won. Every man who has an original thought can win if he strikes out an original theory for himself. You say people do not want those things; you do not know what people want; people are anxious for the best; we are getting away from log cabins and rag carpets. The richest nation in the world is demanding the best things that can be purchased. Art is a thing that we do not need, and we buy it because it is good. Clothes are necessary; they are something I must have, whether they are good or poor. When I buy pictures I buy the best I can secure, and your people want to know where to secure the best."

Messrs. Hoyt, Professor Beck and Edmondson sent up a communication to the effect that Mr. Parkinson's picture in the salon was selected to represent the Photographers' Association of New England in the Interstate exhibit. A reproduction of this print forms the frontispiece to this issue of the MAGAZINE.

Friday Morning Session.

President Hearn called the meeting to order at 10.30, introducing Mr. W. J. Edmondson, of Cleveland, Ohio, who addressed the meeting upon the "Making of Groups," his address being in substance identical with that delivered at the Buffalo Convention.

Mr. Edmondson's address was ably illustrated by enlargements of variously composed groups. By an ingenious method of single paper figures of the same size as the single figures in these enlargements he was able to transpose certain figures and place them in other positions from what they were in the original prints, so that, while explaining why certain groups were bad and what made them bad, he could, transposing said figures to other parts of the pictures, make an artistic grouping. He so imparted his knowledge that the audience were enabled to easily absorb the valuable instruction.

Among other things he said: You all understand the importance of principal spots in arranging groups when you have various colored gowns, and in this group I want to show you how a good group can be arranged by using this principal figure in the starting point (illustration). When you have fifteen or twenty people come into your studio you are liable to be confused if you attempt to handle them all together, so select five or six of the people in the same colored costumes, light or dark (in this case light), and arrange them in one spot, taking pains not to have that group immediately in the centre of the canvas. Notice the individual pose, take pains not to get each one of them shoulders square front, make interesting lines—get the distance between the heads to vary—get some turned one way and some another. Notice here this is done very well; here are three together, and then two. Avoid equality, make variety; here also the line goes in to avoid that straight line on the floor. Now the question is what to do

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with the rest of the picture, and, of course, you will stand them in the back. Now here in this group, on that side, of course, you will not put the tallest man there to make the top line of the composition to conform with that line; that would be a repetition of this line, and it would also bring the composition all on one side; the tallest man should be there (illustration). You must settle that in your mind, where you will have your highest point—your starting point. Now, of course, you will not arrange the figures all at equal distance; you will break them up—you will put tall ones and short ones together—you will not have the heads all conform equally on that line; it would be too exact and show your motive too much (illustration). Now when you have a large crowd, of course, it is a problem to get this variety and especially in a crowd of young men and women the same height, so you want to have stools or anything to raise or lower as the case requires; also one or two big chairs, so when you have a group that requires an important figure you can use that chair as a starting point (illustration).

Professor Beck's book on *Art in Photography* was then exploited before the meeting by two or three members, and was endorsed by the Association as worthy of the attention of professional photographers.

Secretary George M. Bolton made his annual report, which showed that the Association had a substantial balance on hand, but was incomplete in detail. In the course of his report he extended the thanks of the Association to all who had assisted in making the Convention a financial success.

The question of two salons for next year, as already mentioned, came up for further discussion. After remarks by several members the question was put to a vote, and it was decided that next year should be a "No Prize Convention." Whether this meant the abandonment of the salon was not quite clear. The nominations for officers for the ensuing year were then brought forward, and after much discussion the officers announced on page 363 of our September number were duly elected.

At mid-day the photographers again attended demonstrations of lighting and posing in the various studios.

Friday Afternoon Session.

The business of the meeting began with a discussion upon various constitutional questions. Motions were carried to the effect that the Secretary of the Association should receive as salary 10 per cent. of the gross receipts of each year; also to the effect that although the New England Association would support the National Association each year, yet it would hold its own Convention separately yearly as before.

The President then announced that Mr. W. M. Hollinger had found it impossible to attend the Convention. His place was taken by Professor Griffith, who delivered a lengthy address, from which we make an extract of interest.

Mr. Chairman, Ladies and Gentlemen: It gives me great pleasure to fill someone else's place, for the simple reason that I failed to be on time at the hour when I should have been here. I do not know that I can fill Mr. Hollinger's place. Mr. Hollinger is a unique character, full of energy and fire, which accounts for the artistic qualities that you see in his pictures. He fills you full of enthusiasm, so that you make up your mind you will go back home and make your work as well. I knew Hollinger when he was in Ohio and doing very little business. The man knew and thought he had something in him that he might develop, and he went to the city of New York and opened up a new way for himself, carved out a new way or avenue. To-day he prides himself upon the fact that he never disappoints a sitter as to the time when he can have a photograph. I say photograph, because he will not make but one; for that reason he never disappoints a person when he says the picture will be ready to-day or the day after. He makes but one picture, but it is so full of himself that you do not require the name of Hollinger. It may be a wide picture, it may be a square picture; it is a picture that Hollinger gives you and you do not question it. $5.00 is the price. You say: "There is room for only one man like that in this country." I say: "There is room for other men when they do something

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that is unique and something that the people want." A year ago you people were gathered here, and I disappointed you as Mr. Hollinger has to-day. Not through any fault of mine. A young man who had been with me for twelve years had passed away, a most charming character. On the 15th of August he passed away. I could not talk. I cancelled engagements in every direction, simply because had I got up to talk before a crowd of people at that time, the thought of that young man would have come before me, and I would have broken down. Now that is the temperament that comes to the common man; we do our best things when we have thoroughly thought it over, and then bring into play that better part that is in us. I do not mean that you must live up in the clouds forever. You can never do that; you will never get enough for bread and butter by that. The best one is the man who can go up in the clouds and can stay down on the earth and can bring the two together, the same as the farmer takes the old horse and the young colt to break the colt in. Why many photographers fail in a business success is that they are not thoroughly artistic, and whenever you find a thoroughly artistic man you will find one that lacks business; the two do not go together. Now provide yourself with a business woman and let her look after the details, and you take care of the camera, dark-room, printing-room, and bring out work that will bring that man or woman enough business that they may have their hands full.

Professor Beck then gave a brief address, as follows:

There is a confusion to-day among photographers concerning portraits.

They have the impression that the teachers of art at their conventions encourage such so-called fuzzy effects as are seen in the work of some of our contributors to the foreign department.

The true art teacher has not these intentions. He believes that "good, straight" photography—that is, clean flesh, clean forms rendered—are especially suited to the portrait the people want. However, he finds that in this regular work, this straight, "unfaked" photography, there are possibilities for improvement of such degree that the photo-likeness, so prevalent now, can be made into a portrait in the fullest sense of the word.

Photographers are not at their conventions in the proper mood to study art from a technical point of view. The speaker's platform is not the place from which to expound theories. Art-study is too subtle for that. Effective lessons are brought home only when the artist and the photographers can chat together over the latter's prints and point out the way to higher things. It is remarkable how quickly the photographer young in spirit will see how a likeness is turned into a portrait when a well-schooled artist makes in his background a line that transforms his picture from a grouping of natural objects into a picture having the most satisfactory facial expression.

The magic that makes art in a photograph is not a view developer, or better printing, or a new kind of knowledge of how to "arrange" the figure in the frame.

Lectures on posing will in five years be a thing of the past. Talks, essays and theories on lighting will entirely disappear. In their place there will be art instruction of the most serious kind, and the one topic will be: "Has this print an arrangement of the lines, lights and darks, favorable to the portrait?"

The idea is new only because photographers have been engrossed with their chemical problems thus far.

To-day, however, where such excellence in chemical results are reached, the paramount issue is to learn to make better pictures.

There is something revolutionary about that, because the idea prevailing in the profession is that if you pose the sitter naturally—get a good lighting, time the exposure right, print well, you must get a fine portrait.

Dependence upon that theory will delay the arrival of true portraiture until the day when the theory has died a natural death!

Photography will be art only when it calls to its assistance such principles as underlie all the arts. These must be taught by the men whose specialty is to teach. Not all painters can teach. Our art academies have gathered those talents for teaching that make art study shorter for those using the system.

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Photographers need, above all things, a system at this, the earliest stage of their serious art—art impulses. They need a system because they need a common language, one that will give a foundation to the whole forward movement. As far as talent is concerned, photographers are as well supplied as are the students that come to the fine arts' academies for instruction.

The difference between a photographer's work and that of the art student is only that the latter gets a start in "art thinking" and the former shrinks from it, or fails to make the sacrifice necessary to get the simple start.

President Hearn then introduced Mr. James G. Campton, an artist connected with the Lens and Brush Club. Mr. Campton addressed the meeting upon "Objects of the Lens and Brush Club," a few extracts from his speech following:

"Mr. President, Ladies and Gentlemen: It would ill-become me to take any of the time that is allotted to the programme of this Convention if I did not feel that what I have to say is of importance to you, and when I speak of the Lens and Brush Club I feel that I am talking of something in which every photographer in New England should take a personal interest. When I look at the magnificent exhibition in this hall, and consider the programme we have been following, I say to myself: 'I wonder how many know that we have a little convention here in Boston all the year round.' Very few present, I will venture to say, have not heard of the Lens and Brush Club, but I fancy that not all are posted on what the club is doing in the interest of photography.

"With the election of officers last spring the club entered upon a new régimé. In the two years of its existence it had grown from a mere handful of photographers to a membership of over a hundred. It could look proudly back on much that had been accomplished; it could point to artistic impulses that had been matured, to progressive tendencies that had been stimulated.

"Best of all, it could claim the credit for an era of good fellowship and brotherly feeling paralleled in no other community of photographers. We feel that too much cannot be said in praise of the energy and executive ability in the efforts of those to whom it owes its organization.

"Let me urge all of you who are within reach of Boston to come into the club. It will be worth your while. You need it in these progressive times, to get together occasionally, to compare notes, and see what is going on in photography outside of your studio; and you need to get together socially and make each other's acquaintance, and be reminded that you are not the only photographer in your town. All this, of course, you can do at the conventions, but once a year is not enough. Let it be borne in mind that this club is for all photographers. The Lens and Brush Club is not an aristocracy to which only the elect may belong, but a democracy to which the little man is as welcome as the big man. For while the little man needs the inspiration and counsel of the man who stands on a plane of achievement far above him, it is equally true that the big man needs the little one to stimulate him in his efforts, and to call out his latent possibilities. The Lens and Brush Club has three or four purposes in view as a subdivision to its great aim to advance the cause of photography. It endeavors to bring the artist and photographer closer in touch and a better understanding, believing that it will result in good to both. For while in the past photographers have failed to apprehend or grasp the spirit and principles of art, it is equally true that artists have not understood photographers. And it is as much to give the opportunity to become acquainted with the wealth of ideas and deep artistic sensibilities that have long lain dormant and unsuspected within you (but are beginning to show forth so grandly) as it is that the artists may impart their ideas to you, that they are asked to address you at the club."

Following Mr. Campton's address, Mr. Hearn introduced Mr. James Inglis, of Chicago, who addressed the meeting as follows:

"Ladies and Gentlemen: I would like to know what I am going to talk about. You have had a great deal of talking today and other days, but what you want me to speak about, I do not know. I am no talker like the man who spoke to us yester-

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day. I know nothing about it. Would you suggest anything to be spoken about? (The President: Please give us your idea of the 'fuzzy photographs.') Well, as regards the fuzzy pictures, I will tell you the first thing about them, as it strikes me. You all know, Mr. Todd, of the *Photo Beacon;* he likes to talk like myself; he will talk you blind if you give him the opportunity. He made a trip down through the eastern part of this country, and he went to the leading photographers and he had photographs taken of himself, and printed them in his photographic journal, and showed the advance of photography, but as photographs from leading photographers I think they were flat failures. Mr. Todd swore by me. He said he got all his information in regard to photography from myself. Now, that I express my opinion in regard to the fine (?) things he had got, I told him I had no use for these kind of things at all. He said: 'You are an old fogy.' There are a great many in this hall who can keep up with the age. That is what I think of the fuzzy pictures; I have no use for them. While I have no use for the fuzzy pictures, I do not like sharp things. If we could strike a happy medium we would satisfy the taste of the usual customer who simply wants a photograph—a likeness of himself. I find that the people I talked to say there is no doubt but there is a demand for such pictures, and they therefore fill a niche in photography. I would by no means say anything to hinder them. They open up an avenue to us who can follow them. I would say, let everyone act according to the spirit that is in him. I have listened with a great deal of interest to Mr. Griffith, Mr. Beck, and Mr. Edmondson, who are all first-class talkers and instructors. Sometime ago I heard Mr. Beck out in Ohio, but I was not impressed with his talk, but those he gave here were very, very good things. I do not think there is any photographer who can go away without benefit; I know it has helped me. I said more than I intended to. I got off the fuzzy pictures.

"There is one thing I have maintained in the way of lighting—I think it is the most important thing, but you do not need to sacrifice one iota—and that is to get the light upon the subject's face that will bring the character out in its best form. When I published my book I only took a few sketches and put them together and gave them to the publisher, and it has gone abroad among the photographers. I must say that the quality of photography has been immensely increased, and the work that is made upon the lines of that book is certainly the leading work to-day—it is not 'fuzzy' by any means. You can have those 'fuzzy' pictures and have the light in another way. Mr. Griffith said you were to steer clear of the whites in your pictures; that they were the most dangerous things to have; these pictures are full of lights, but toned down, and they are the most beautiful things in the hall; that is an illustration of what I have in that book. Mr. Steffins' pictures and some others bring out this clearly. They are the most beautiful to look upon; the arrangements of the character of the individuals are most grand; you have there artistic qualities and beauty on one side, and all the strength desired upon the other."

Mr. M. B. Parkinson, as President-elect, then delivered a brief address. He said:

"I just want to say, as President-elect, that no speaker that speaks from this or any other platform here next year will be troubled with the driving of nails while he is talking. I have an idea that speaking can be done in the smaller room. When people go into that room they will go there and stay until the speaker is through. I will have this room fenced off, and give the whole hall to the business men. You nor I had no idea what the difficulty was; we people here in New England are not less intelligent than they are in Buffalo, but in this hall you are not so responsive, but you cannot be, because you are prevented. That noise took my mind off the speaker. When you are in a room by yourself he holds you, and really makes you do and think anything. Is this society going to die? I think not. I thought a few minutes ago of what they were doing in photography a hundred years ago. It has come into my mind that if, after death, we visit our place of birth, then those persons who were once making pictures are even now in this room seeing what we are

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doing. I promise you right here that if the spirits of the disembodied come back to earth I will join you all, and we will meet and hover around that hall where our children's children's children's children are exhibiting photographs."

President Hearn then paid tribute to Mr. George H. Hastings as first President and founder of the Photographers' Association of New England. Mr. Hastings made suitable response.

Mr. Gustine Hurd, of Providence, spoke of the pleasure he had received in the Convention, after which President Hearn made a few remarks expressing his great obligations to all who had helped him during the year, and then the Convention was declared closed.

THE OHIO-MICHIGAN CONVENTION.

Cleveland, August 27th, 28th, 29th.

For a second time the Photographers' Associations of Ohio and Michigan have united in convention. The meeting this year was held at Cleveland, Ohio, August 27th, 28th, and 29th, under the leadership of Mr. C. S. Bateham. About 150 members were in attendance at the opening session. Mr. Bateham, in declaring the Convention open for business, introduced Mr. H. R. Cooley, representing the Mayor of Cleveland. Mr. Cooley delivered an address of welcome, remarking particularly upon the fraternal good feeling which he had noticed among photographers.

The President responded, asking for a vote of thanks to Mr. Cooley and to the city of Cleveland, which had provided the hall for the Convention. The motion was put and carried with enthusiasm.

Various preliminaries having been disposed of, President Bateham proceeded to give his annual address, dealing with "Professional Photography: Its Needs and Possibilities." This appears as a separate article on another page. The President's speech was followed by a lecture on "Art Composition," by Professor Beck. This paper, also, will be found on another page.

After the reading of Professor Beck's paper, the Convention adjourned until 8 P.M.

Second Session, Wednesday Evening.

The meeting was called with the expectation that Professor Griffith, of Detroit, would lecture, but he was unable to attend. Mr. H. M. Fell, of Chicago, took his place with an address on "Some Successful Photographers," the substance of which is given elsewhere in this issue. On the conclusion of Mr. Fell's address, Mr. Dozer, of Bucyrus, said: "I want to offer a resolution of thanks to Professor Beck and to Mr. Fell. Some people may think that what the two lecturers said this afternoon and evening was diametrically opposed. On the contrary, they are and run exactly together. I have attended a great many conventions, and have heard a great many people speak in regard to the artistic method and the business method, but I must say that I have learned more this afternoon from Professor Beck, and have got more good ideas from Mr. Fell this evening (right in line with what Professor Beck had to say this afternoon) than I have ever heard before, and I wish to offer them in one motion a resolution of thanks for their helpful advice."

President: I think your resolution meets with the hearty approval of everybody here. Seconded. Now, let us all "stand by each" and give a good hearty "Aye." (Motion put and carried unanimously.) I believe there will be no further business before the meeting to-night. The committees will be appointed in the morning, when there will be more photographers here. The meeting then adjourned.

Third Session, Thursday Morning.

The first item on the programme was a lecture by Professor Beck. This is not included in the official report, so that we are unable to present it. Mr. G. Cramer was called upon to give a few minutes'

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talk, and he responded with a few practical hints on the successful manipulation of plates. Mr. Cramer's address was based upon the new edition of Cramer's *Manual*, and was very much appreciated by those who heard it.

The Association endorsed Professor Beck's forthcoming book on *Art in Photography*. It was stated that 200 subscriptions were necessary to publish the book and that about seventy-five names had already been recorded on the list of subscribers.

Various committees, for the nomination of officers, the judging of the pictures, and the working together of the State Association and the National Association, were appointed by the President, after which Mr. Felix Raymer gave a lecture on "Daylight and Flashlight Portraiture." The substance of this address appeared in our July issue, and is therefore not reprinted.

The meeting then adjourned until Friday morning.

Fourth Session, Friday Morning.

At the beginning of the session President Bateham explained the absence of Professor Griffith, and read several communications received from photographers who were unable to attend the Convention.

A communication from Colonel J. A. Ockerson, of the Department of Liberal Arts, St. Louis World's Fair, was read, asking the support of the Association for the photographic exhibit at the fair. President Bateham advised the photographers to get Circular No. 5 of Colonel Ockerson's department (published in full in our issue of July), and to lend their help toward making the photographic section of the fair a success.

Mr. W. J. Edmondson then addressed the Convention upon the "Arrangement of Groups," his address being substantially the same as that delivered at the Buffalo and Boston Conventions. A few extracts from the Boston address are given on another page.

Mr. Edmondson's talk was followed by a paper on "Reception-room Methods and Ways of Obtaining Better Prices," by Mr. I. J. Giddings. This paper is given separately on another page of this issue.

President Bateham followed with the report of the judges on the special prize pictures. It should be understood that no prizes were offered at the Convention except in a Special Cash Prize Class open to the world, in which $150 in gold was offered for three photographs measuring thirteen inches or larger. The judges reported that they awarded the first prize of $75 to Dudley Hoyt, of Rochester; the second prize of $50 to Moore & Stephenson, of Atlanta, Ga., and the third prize to A. T. Proctor, of Huntington, W. Va. The judges were R. P. Bellsmith, Will H. Moses, and C. L. Lewis.

The following officers were then elected for the ensuing year: President, A. L. Bowersox, of Dayton, Ohio; Vice-President for Michigan, Charles Beckman, of Saginaw; Vice-President for Ohio, F. R. Bill, of Cleveland; Secretary, F. W. Wolf, of Cleveland; Treasurer, A. G. McMichael, of Detroit.

Mr. Edmondson then addressed the meeting as follows: I want to say a few words about a matter of vital importance to this Association and which is blocking the progress of all the Associations in America, to-day, viz.: the fact that you hang anything that is submitted. It does not make any difference what it is, every picture that is brought to the Convention is hung. This is a decided mistake, because it does not represent the best of the photographic work of our section. Now, why couldn't this Association take the initiative in that movement? Ohio has led in many things, photography and otherwise, and why can't this Association to-day instruct its Executive Board that a jury of selection be appointed by the Executive Board, that jury to be composed of photographers and artists, or wholly of photographers, whichever you like, and have all pictures submitted to the jury of selection of ten or twelve men. In that way you will get an exhibit every year that will be worth looking at. This idea of hanging good pictures with poor ones is blocking the game. I would like to see this Association instruct their Executive Board to that effect. I think it will do more good for your Association,

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and it will be better for the photographers, and I am very much interested to see a step taken that will be for progress. I would like to hear from other members in regard to that. Let's hear from Mr. Lewis.

Mr. Lewis: You have said it all, and there is nothing left for me to say. That is the best speech you have made in your life.

Mr. Sperry: I am entirely in favor of the proposal, if these exhibits could be gone over and the good ones taken out and the poorest ones rejected.

President: Have you a plan to propose, Mr. Edmondson, in regard to bringing the matter to a vote?

Mr. Edmondson: I would like to hear this matter discussed in order to get the sentiment of all the members present. And if it is the sense of this meeting that such a motion be put, let us do something that will do more for our organization than we have ever done.

Mr. Goddard: I agree with these views with the exception that I don't exactly agree on the jury of selection. The photographer should be excluded and our pictures selected from the art standpoint, leaving the photographer's standpoint out of the question. The question is, Is the picture good or bad? Is it really a picture? I don't think there is a photographer present here to-day who is qualified to judge of a good picture, for the reason that we are not liberal enough. Artists are more liberal minded. I would be in favor of having a jury of that kind, to be composed exclusively of artists of merit, and let them make a selection.

Mr. Sperry: I don't believe in judging photographs merely from the artistic side. We cannot wholly overlook the technical side in photography.

Mr. Goddard: I am willing for one to submit my work, but I never would submit my work to photographers.

Mr. Edmondson: I think Mr. Goddard misunderstood my remarks in regard to the jury of selection. I said artists and photographers both. I will make a motion that the Executive Board of this Association be instructed to appoint a jury of selection for the next Convention, which will pass on all the pictures submitted, and that that jury be composed of three artists, three photographers, and the President of the Association. Seconded.

Mr. Lewis: Before you put the motion, I think we had this up several years ago, and that is when we instituted our salon. We instituted the salon to overcome that difficulty and to give the opportunity of bringing out the pictures that were to be criticised wholly by artists, and our salon exhibit is already a very worthy collection. I don't understand as yet whether that is to be dropped or not. The Michigan photographers have not as yet contributed anything to it, and therefore it remains the Ohio salon. I would like to ask if this is to be dropped entirely in the event of such a jury being appointed.

President: It remains for the Association to decide what will be done with our salon.

Member: It seems to me that the salon question need not be brought up at the present time. Most of us are engaged in making portraits, and endeavor to make them as artistic as we can; for that reason, as was said yesterday, we want to keep our feet on the ground. I would suggest that this committee, if we have a committee, should be composed of a majority of photographers, if not entirely of photographers. If we have to go outside the State to avoid petty jealousies in choosing our judges we could do that; if we can get photographers in Ohio who will be liberal enough to judge their neighbors' work, we would better keep it entirely in our own State. I think this matter of the salon need not be brought up at the present time, because it has no direct bearing on this question.

President: Are there any further remarks on the question at issue.

Member: I don't know whether the gentleman knows it or not—I think he must live in Ohio—this Association, I believe, is an Ohio-Michigan Association. Now, with regard to this salon, I have not had anything to say or do about it, but I have an opinion, and the President has asked us for our opinions. It strikes me that where photographers try to keep up their work and do artistic work that it should be recognized, and that the pictures that the committee considered the best should be exhibited at our studios in

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order to bring up the public appreciation of artistic work. It is my experience that my own artistic pictures, or those which my friends tell me are artistic, are not recognized as such by my customers. They think the everyday work, such as we get our money for, is the kind they want. I think we ought to, as photographers, teach the public to recognize good work, and if we make pictures for an exhibition, and they are accepted, we should exhibit them and let the people see what kind of work is accepted by the Association, that they may learn what good work is.

Member: I believe in having the pictures gone over, hanging only those that are worth looking at. If you don't, you get a big lot of pictures of all kinds, and I would rather have ten pictures and have them really good than to have ten thousand that were not good.

President: It seems to be the almost unanimous expression of opinion that we take some action in this matter. All in favor of the motion that the Executive Committee appoint a jury of selection to pass on all pictures to be hung up at the next Convention, please say "Aye." (Carried.)

Mr. Edmondson: Let us have an expression of opinion from everybody here; everybody vote yes or no.

President: I think I will call for a rising vote. All those in favor of the motion will please rise. Vote taken, none opposed to the motion.

President: I think all the active members voted for it unanimously. One point that occurs to my mind, I don't know whether you meant to include it in that idea, but it is this: Whether there should not be a motion made that everybody who expects to attend or belongs to the Association should send some pictures. Now this thing of not daring to send any ourselves, and just coming and looking at the others every year, is one of the loose things about this Association, it seems to me. I should like to have somebody bring that point up.

Member: Allow me to make a suggestion. I believe that it would be very important next year that the committee who have charge of the criticisms should pass from one exhibit to another, and let the man who made the picture be there to see just what will be said about his work. In that way he can learn and correct his mistakes. I believe that it should be known among all photographers that they will be criticised and that they can be present and hear the criticisms. It would be an incentive for them to bring work and an incentive to bring themselves and hear what is said about their work.

President: You understand there is not to be any picture hung except those passed upon by the jury.

Member: So much the better; select the good pictures and reject the bad. The only way is to be there when the jury points them out and make their selection. I don't see any better way to learn than that way. That is one suggestion for next year.

Mr. Edmondson: That idea is right. I think that this motion that has been passed will make the exhibit stronger and better. Why not hold the meetings right in the exhibition-room, in the centre; have the pictures on the outside, and have heart-to-heart talks about the pictures on the walls, in plain sight of everybody. Have the pictures before you, so they can be discussed in the meeting. It will make the sessions more instructive and interesting; we could all criticise and talk about it.

President: That is a very good idea, if we are sure of having the pictures to put around on the walls.

Following this discussion Mr. Edmondson called attention to the book *Voigtlaender and I*, by Mr. J. F. Ryder, about to be published. Mr. Edmondson described the book as very interesting and well worth reading. In his opinion, it should be bought by every member of the fraternity. Mr. Cramer added his endorsement to the book and advised its purchase by photographers. In answer to calls for Mr. Ryder, that gentleman got upon his feet and expressed his pleasure in meeting the photographers of Ohio and Michigan.

The President then called attention to a number of early ferrotypes, which he said were known as lynotypes, made by Peters on enamelled iron plates in 1855. Mr. Bateham said that these lynotypes had been exhibited at the Philadelphia Centennial in 1876.

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The President next read the awards of the Salon Committee, as follows: "The jury has pleasure in reporting five pictures selected for the salon. One by George B. Sperry, of Toledo; two by Edmondson, of Cleveland; one by Minns, of Akron; one by Lewis, of Toledo. For honorable mention the committee reported C. S. Bateham, of Norwalk; A. L. Bowersox, of Dayton; W. N. Brenner, of Cincinnati; Bill, of Cleveland, and Beckman Bros., of Saginaw, one picture each."

Further discussion upon the question of pictorial exhibits then ensued, without any definite conclusion being reached.

The place for the next Convention was then discussed. Upon vote, the meeting showed sixteen in favor of Saginaw, Mich., as the location of the next Convention, thirteen members voting in favor of Toledo. It would appear from this that there were twenty-nine photographers representing the States of Ohio and Michigan at this meeting.

Announcements were made concerning the banquet to be given on the last evening of the Convention, and votes of thanks were passed to all who assisted in the success of the meeting. President Bateham then declared the Convention adjourned until 1903.

At the banquet in the evening covers were laid for 300, and almost all the places were filled. A good supper was served and an orchestra was in attendance. After supper a flashlight picture was made. Among the speeches was one by Mr. Bowersox, the newly-elected President. Finally, Mr. George B. Sperry, of Toledo, was called upon, and he made an address praising the work of President Bateham, and in concluding he presented Mr. Bateham, in the name of the members of the Association, with a bronze vase of beautiful design and workmanship. Mr. Bateham made suitable response. The tables were then cleared, and those present enjoyed a series of dances.

SUCCESSFUL PHOTOGRAPHERS I HAVE MET.*

BY H. FELL.

AFTER a few introductory words to his audience Mr. Fell said: I propose to discuss my subject in a very broad way. I happen to have travelled this United States from one end to the other, both in convention work and in the larger cities, and have come in contact with a great many successful men in the business. Now, in photography success may be in two ways—one is in a business way and the other is in an artistic way. The majority of us are not in this business for our health; we are in it for the money that is in it. I have noticed as I travelled over the country, when I went into a town where the members of this profession seemed to have a friendly feeling for each other, where they spoke well of each other, that in those towns that business was always good. I have noticed in those towns that the people have a good opinion of the men engaged in the business, and they mention the photographers to their visitors. When I go into a town where the photographer still holds the old idea that no other photographer should live in that town except himself, I have always noticed that the people never had any better opinion of that man's business than he seemed to have himself. The public will always judge us exactly on the plane that we judge others. Let us speak well of each other; let us pay attention to the physician and the lawyer upholding each other, and do as the Dutchman said: "Stick together, side by side."

When I find the showcases bright and clean, the entrance well kept and neat, the reception-room attractive, and all parts of the gallery in order, I always find good business. But where I find the entrance ill kept and the showcases run down and full of cobwebs, or the reception-room papered with pictures, lots of them lying around on the centre-table, and the counters, as if they were of no value whatever, there I find a man sitting around complaining about business.

Remember that the larger part of your customers are ladies and children, and when they come to you your place should be as neat and clean as the homes they come from. When I find a man who recognizes the point that his money is made in the reception-room, there I find a successful man. When I find a man who pays no attention to his reception-room, then I generally find a man who kicks about business. The most successful men in this country are the men who realize this point, and I could make a list of men who have made a success in this business. I will mention

* An address given before the Ohio-Michigan Convention, 1902.

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first Mr. Blank, of Blankville. Mr. Blank has always been very careful about his reception-room service, recognizing the fact that he cannot earn $6 in the reception-room where he can earn $100 under the skylight. He knows it, consequently he gets somebody who can.

Now I will give you a little incident of two people in the reception-room. I went into a certain reception-room, and was talking to the proprietor when two ladies entered. In the centre of the room was a table piled six inches deep with all kinds of pictures. They said they desired to look at some pictures, cabinet size, and he walked over to this table and showed them the pictures. They looked at them and asked how much they were. I think they were $7 a dozen. They did not see anything that suited them, and he just ran his hands through them and turned them over. They left, saying they would probably call again. A little while afterward, in another gallery in the same town, with a neat showcase and a trim, well-dressed girl behind the counter, the same two ladies entered. They wanted to look at some photographs. The young lady laid a nice pad on top of the showcase, and on that pad she displayed some different styles of pictures. She handled them as if they were diamonds, showed their good points, talked about them, and what she did show were good pictures. They gave their order, and had their sittings made right at the time. I never forgot the incident.

I called at Mr. Blank's place again this last winter. A couple of ladies came in, and his saleslady stepped up to wait on them. They said they desired some cabinet pictures, and she showed them some. They wanted to pay about $6 they thought, and the receptionist went over to a little cabinet and pulled out a drawer and showed them a $6 picture. They admired them, and the assistant said: "We are busy upstairs; if you are not in a special hurry I would like to show you what we are doing in photography now, not that I expect you to buy, but I just want to show you." The visitors said they would be delighted, so they were shown some $12 pictures. Pictures costting $25 per dozen were next displayed, and the little woman kept pulling them out until finally she showed her visitors a very handsome picture that cost $120 a dozen. The pictures were discussed quite a while, and when the ladies finally gave their order $12 did not look half as big as the $6, so they ordered the $12 pictures. Now that is where the saleslady earned her salary; that is the difference between success and failure in your reception-room.

I have been in reception-rooms and seen people come in and walk out again for the simple reason the people behind the counter could not sell them anything. Be careful with your reception-room people. One of the most successful men in this country, when I congratulated him last winter on what a splendid corps of assistants he had said, "Why," "that is where I make my money. I don't make it upstairs; this is where I make it, and I get people here who can make it." And the men over this country who have discovered that fact are the men who are successful in a business way, for it is in the reception-room that your money is made.

There are two sides to our business, as I said before. One is the business side and the other is the artistic side. The business side you handle in the reception-room; the artistic side you handle under the skylight and in the finishing-room. I often hear it said that this man or that man fakes his negatives. I do not understand what is meant by the term. I do not think that there is any such thing as faking negatives. I think that any man has a perfect right to correct this or that point in a negative. No man ever painted a picture without painting out and repainting different parts. In listening to the art critics at the different conventions there are several points I have noticed that I am going to take up and talk about. I see Prof. Beck at the back of the hall, and if I mislead you in any way the professor can correct my blunders.

I feel that many photographers are to-day between the earth and the sky as far as knowing just what they should produce to make correct and artistic work. The reason I feel compelled to take up this question is because at a certain convention this spring there was a prize offered for the three best portraits. Now here were three pictures hung on the walls of that convention; these pictures were sent to the convention complimentary. However, they were placed in the prize-winning class. One of these pictures showed a table with a dog standing on a chair, with his forefeet on the table; a cat on the other side of the table, and a little girl at the side of the table carving food. The second represented a Grecian draped figure at a fountain. The third print was a fancy three-quarter draped figure of a lady, and the judges awarded these three pictures the "Grand Portrait Prize." The line of art that we are interested in is the art of drawing or painting on flat surfaces, and I think that we can divide this up into four general classes for convenience: First, portraiture; next, genre, or subject work; landscape, and architectural. The work that photographers are most interested in is "portraiture," pure and simple, and I believe that in these State and national conventions we should make a special effort to devote a certain division of space to the very best portraiture that can be produced, and that portraiture should be kept distinct and separate from genre work or work produced entirely for pictorial effect.

When I go to a convention and see the walls full of pictures made purely for pictorial effect I cannot help thinking it strange that more attention is not given to that which interests them more vitally than any other part of the business—namely, portraiture. Let us pay more attention to this line of our work; let us have these two divisions in all photographic conventions, so that when a man engaged in portraiture exclusively comes to our conventions he can there see the very

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best productions in his line of work, and benefit accordingly.

To-day we find two schools of art, the impressionistic and the realistic. The impressionistic teaches us we should paint just what we receive at the first impression. The realistic is the old school, that teaches us to put on canvas everything that we see after careful study. Now, I believe there is a happy medium that can be reached. In looking at the portraits painted by the great masters, pictures that have lived and stood the tests of several hundred years, I find them painted in the realistic school. The German truly said: "God made our bodies, but we make our faces;" and so we do. Give me a man, and let me look at his face, and I will tell you his strong and his weak points. That is "faceology," or you might call it so. To do that I want to see every line; I want to see every wrinkle in that man's face; I want to see both sides of his face, I want to see if both sides are even; I want to see the shape of his jaw; I do not want to see a portion and the rest of it disappear in the background. If you will take up a course of study in portraiture by the old masters, you will very soon see the difference between pictorial work and portraiture. In making portraits we should make them as artistic as possible, we should idealize and never brutalize; but we should make portraits first and foremost. Sir Joshua Reynolds, one of the greatest portrait painters that ever lived, laid down a rule that on an eight-foot canvas the point of absolute shadow—that is, shadow without a particle of detail—should not be larger than a pea, and the highest point of light should be the same, and that all intermediate should be half-tones. In portraiture the half-tones of the shadows should be transparent and full of detail.

Another important point in portraiture I find no attention paid to at all is atmosphere. Men who paint with brush and colors very truly say that photographers have two planes in their pictures—foreground and middle ground. We have no distance and no perspective, which is too often the case. We pay no attention to the correct relation that the tone values of the ground should bear to the shadows on the face, and instead of having background to our portraits we have middle ground. We move the background right up around the head until the head and body are lost in it, and the background appears as middle ground, giving the appearance of the subject sinking back into the background. Now this is entirely wrong. The human head should be painted so round that if you were to wipe out every feature there would still remain no doubt from what remained that it had been painted for the human head.

I was looking at some pictures some time ago painted by a famous Russian artist. They were portraits of Russian peasants, and as I looked at them it seemed to me impossible that those pictures were painted on a flat surface. The heads stood out so bold and round, it seemed that I could put my hand back of them, and I felt that I could certainly pat them on the cheeks. Down in the shadow every wrinkle and every mole showed, and in the highest point of light it looked as though the sunlight had touched the face at that point. You were sure that the portraits were painted in the light where it was cheerful, and not in a coal cellar.

If you will take up the study of the old masters you will find that they lived at a time when it was necessary for them to grind and mix their own colors, and some men were more famous than others for the strength and beauty of the colors they were able to mix, and their pictures were renowned for the strength and beauty and brilliancy of the coloring. Your patron Rembrandt was said to have been able to paint richer shadows and higher lights than any artist of his day. His shadows were said to be mysterious, for as you looked at them you found they were full of half-tones and detail. Remember that some of these famous pictures have been painted three or four hundred years, and time has dimmed their brilliancy and faded the colors; but when the master laid the colors upon his canvas he aimed for brilliancy, roundness, and richness.

The reproductions of famous paintings that you see in the art stores give a very poor idea of the values in the original paintings. A man may obtain permission to make a copy of a famous painting. The negative he makes is valuable; he probably makes a transparency from the first negative, and from that he makes negatives to print from. When he sends the picture out some other fellow proceeds to copy it. By this time the copies may have gotten to New York, and somebody gets one of them and makes a copy of it again; and so they keep on, every time losing the transparency of the shadows until the reproductions become simply masses of black and white without a particle of detail in them.* When you look at these reproductions you must remember that the more delicate half-tones are lost. You must remember that a great deal of the atmosphere is gone, but you cannot fail to notice, even in these reproductions, that a man's face and body are thoroughly outlined and the background is what its name implies, a background and not a middle ground. When I look at a man's picture I want to see his body, to look at his shoulders, to see whether he is a self-reliant man or a lazy man: I want to see how he wears his clothes, and I will be able to see if he is a neat man, if he thinks well of himself and takes care of himself. When the old masters painted portraits they showed the slope of a man's shoulders, how he carried himself, and you could tell at once whether he was a student or a soldier.

* This mistaken notion, here repeated from a remark made by Prof. Beck, deserves correction. As a matter of course, no reproduction in monochrome can equal a colored original in value or interest, but for the photographer's purposes the standard reproductions of the old masters, such as those by Hanfstaengl, Braun, and others, are fully adequate.—ED. W. P. M.

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RECEPTION OF THE DUKE AND DUCHESS OF YORK

At the Town Hall, Adelaide

By Ernest Gall, Adelaide, South Australia

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WILSON'S PHOTOGRAPHIC MAGAZINE.

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SOME ASPECTS OF PROFESSIONAL PHOTOGRAPHY.*

BY HOWARD FARMER.

LONG experience as a teacher and conversation with many young professionals has convinced me that they frequently fail to grasp some of the elementary conditions which lead to success. The keynote of this lecture is the hope that a hint or two may be useful. And first, What is a professional photographer? When we speak of a professional photographer we usually refer to someone whose calling or employment is photography; but the term has two other distinct meanings, and it is these to which I intend referring. The word professional means pertaining to a profession; and a profession is defined as a calling, or employment not mechanical, and requiring some degree of learning; it is also defined as the collective body of persons engaged. For example, when we refer to a doctor as a professional man, we mean not only that he earns his living by his prescriptions, but also that he is learned in the same; and further, we speak of the profession of medicine, because there is a collective body of persons contained in it. Leaving the first meaning of the word (that it implies learning) for the present, let us turn to the second one. If we look up the directories and see what proportion of professional photographers are engaged on different classes of work, omitting from consideration photo-engravers, who form a distinct calling of their own, we find that they are almost exclusively portrait photographers, or that the work they do is for portrait firms. In the London and suburban directories there are about 600 photographers, and we find that the vast majority are portrait artists, only about a dozen being general workers. In country districts the proportion of portrait artists would be found still greater. Again, in the case of the Professional Photographers' Association, of which our Chairman to-night, Mr. William Grove, is the President, I do not know whether there is any special reservation made, but probably it would be found on inquiry that at least 95 per cent. of the members are portrait photographers. Yet again, we find in the advertisements for assistants in the trade papers dozens of retouchers, operators, printers, and others, who work for the portrait photographer, to one who is wanted for general work. Again, at the professional section of the Exhibition of the Royal Photographic Society, the exhibit is almost entirely portraiture. This truth is on the surface very remarkable, as an enormous number of photographs of other objects than human faces must be taken daily, and yet we find they are represented by very few firms engaged exclusively in general work. Obviously, portrait photographers themselves do a large amount of this general work, but only as a fraction of their business. Let me illustrate this in another way: It is extremely difficult to open and run a business as a general worker unless in conjunction with trade printing or enlarging, or

* A Lecture delivered at the Opening of the Polytechnic School, London.

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with some special mode of photomechanical printing, or something of the sort; there are, it is true, exceptions, such as photographing paintings, architecture, and others where men with unusual abilities and aptitudes have by the mere force of their superiority become very successful specialists. But what I wish to be understood is this—that in these sections of work there is no collective body of persons engaged; that, while they are included in the craft, photography as a profession is in the main limited to portraiture. It will be useful to indicate what I believe are some of the reasons of this. One is that in a great many cases the public do not criticise general work, and are satisfied with or accept photographs which require comparatively little skill in their production. In the case of a seaside resort, a sharp view of the beach from the pier, looking east, and showing the Grand Hotel; another looking west, and showing the bathers; and a third of the pier from the promenade, with a steamboat approaching, are usually all that is expected. Another reason is that this work can be done without special premises or appliances; a carriage has to be photographed; it is simply taken outside the coachbuilder's shop, and any objectionable parts of the background are blocked out in the negative. A third reason is undoubtedly the universal practice of amateur photography. A fourth that no idealizing, by which I mean retouching or finishing, is necessary. It is, indeed, surprising how many subjects in general work are idealized out of all recognition, simply by plain, unaided photography.

Now the opposite of these conditions holds in the case of portraiture. In the first place, the sitter, so to speak, is nervously conscious and critical, and it is of the first importance that he should both respect and have complete confidence in the taste and skill of the photographer; even then both he and his friends are hypercritical and difficult to satisfy. In the second place, a specially designed studio, with appliances, is essential. In the third place, you all know the flattering (?) remarks the ladies make concerning the photographs of themselves taken by their amateur friends (there are, of course, exceptions). Fourthly, in portraiture you have to idealize somewhat with very skilful retouching and finishing; it is, indeed, a perfectly fair statement to say that retouchers have made over-remunerated or enviable one, that the the names of many portrait photographers, especially in their first beginnings. Here, then, we have the two sides—the portrait photographer, with his exacting clients, his special premises, and his skill in idealizing; and, on the other hand, the general worker, who suffers from untrained competition, and very frequently also from want of appreciation of really skilful work.

Now I would ask you young professionals who want to get on and to become independent, to recognize these differences, and the conclusion they lead to. I want you to understand that while as young men you may be perfectly happy as craftsmen in any section of work you undertake, that when you get older you will probably have further responsibilities, and require more comfort and freedom from anxiety. That, speaking broadly, when you reach forty or more, a position as a general worker or assistant in photography is not usually an over-remunerated or enviable one, that the real profession of photographer by which you can in any part of the world, where openings occur, start in business and become independent, is portraiture. Further, I would ask you, having recognized this fact, to act upon it while you have the privilege of living in a great city like London and the energies of youth to help you—advantages, I am afraid, you will never fully realize until you lose them—and acquire in your own person all the knowledge and skill required for the practice of portraiture, not forgetting the little needful put by to provide necessary appliances. Also to those assistants who have no present idea of going into business on their own account, I would say, without in any way injuring yourselves in your special work, you will probably find that a knowledge of all the sections into which portraiture is divided sufficient to undertake them if required, will be of great and permanent service to you some time or other. Please do not think I am endeavoring to advertise this school. We can, in any case, only give you a small part of your requirements, and this small

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part I would just as soon that you gained it from your chum in the next department where you work, or that you went to some other school—sooner, if they teach you, or treat you better. But if you are without any obvious opening in a special line, do not rest until you have acquired the essentials which will enable you to take full advantage, when the opportunity comes—which it nearly always does—to gain independence and the satisfaction arising from being the controller of your own life.

OPENING OR BUYING A BUSINESS.

I am sorry I cannot give you any statistics as to how many portrait studios are opened in this country yearly—but the number must be very considerable, I should say not less than one hundred, probably a great many more, and you as workers in London have far greater opportunities of taking advantage of these openings (except possibly in the matter of capital) than any others. You have the prestige of working in the great city, you have the best chance of getting employment, and, therefore, training in many of the leading firms, you have endless possibilities at exhibitions, society meetings, galleries, art schools, shop fronts, etc., of examining and criticising and comparing other work with your own and of raising your own work to the highest standard. You have the facilities for study and association with other workers afforded by this and a dozen other photographic schools. You are trained in the most up-to-date and energetic business methods which exist in England. You have unrivalled conveniences in the way of cheap travel and excursions for finding out where openings exist, besides advantages in many other ways. Could you but fully apprehend the enviable position you occupy, both in fact and in the eyes of many isolated workers and thousands of others in poorer countries, you would go home from here to-night new men in thought, feeling, and purpose.

If you asked me to give you something more definite, if you want, in fact, a formula as you would for developing plates, I would state, make up your mind while yet young—say twenty-five—how you intend earning your living when you are forty years of age or thereabouts, and whether you think of striking out for yourself. Don't think it is so far off that you can neglect it, for not only do the years pass with ever-increasing rapidity, but the power of acquiring skill and knowledge also diminishes with equal rapidity. Begin, therefore, at once by saving a little, never mind how little, but put it by regularly. You will be sorely tempted at times, but whatever you do, do not spend it—the value of this saving is not so much to accumulate money as to teach you discipline and that you are master of yourself. At the same time work things along, by which I mean get the necessary knowledge and experience as opportunities occur. At first and for some time, perhaps a few years, everything may seem against you, then if you have kept to your purpose and to your duties to your employers, things will begin to come easier, and by the time six years have elapsed you will find yourself master of the situation, and will certainly want no advice from me. There are many circumstances which give rise to new openings for starting in business. A better position in town or street to attract custom. Better work. A special line or new style. A new suburb or place where there is no opposition or it is inappreciable. Greater personal attractiveness. Better business methods. In several places in Australia many people have their portraits taken at least once every year, giving a percentage of business in proportion to the population vastly greater than holds in England. The use of capital in fitting up more pretentious premises and developing a proportionate business. There is also a very considerable amount of buying and selling studios going on, more especially in the suburbs and provinces. The chief points to mention in connection with buying a business beyond those which are obvious to everyone is that of being extra careful in respect to a very new business or a very old one, a most notable tendency existing for new business is to go remarkably well the first season or so, and then, if they have not been founded on real excellence of work, or a real want, to die away. In the case of a very old business it is possibly in a state of decay beyond restoration. It is perhaps hardly necessary to mention these various points, any worker who has, through

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several years at least, been steadily preparing himself, not being likely to strike out either rashly or without proper inquiry and foresight. It is the man who suddenly thinks he will start in business and who has made no proper study or preparation who usually comes to grief.

STUDIOS: THEIR DESIGN AND POSITION.

We next have to consider studios, and in order to do so in a sensible manner, must not only bear in mind the purpose for which they are to be used, but also the fact that they are part of a scheme for attracting business. If you wished to work among the well-to-do in any town you would not build your studio in a dirty street, although the rent, the light and the structural condition of the place might be better than the best you can get in a more suitable locality. The first consideration therefore which you have to bear in mind is that the position of your studio is not only a good one, but the best possible; if it is not the best possible or approximately so, you at once invite competition. Therefore, in looking for premises or a position to build, do not be discouraged by the apparent impossibility of getting where you wish into starting at an inferior place. Sooner or later, if you stick to it, you will get where you want and what you want; or, if after long trial you really cannot get where you wish, start somewhere handy, and let your fitments in your own private intentions be temporary for the purpose of moving when the opportunity occurs.

Next to locality you have to decide on the position and character of your studio, in relation to its affording facilities for conducting your business and increasing your reputation. In country places, where land is cheap and the surroundings open, studios are generally built on the ground or first floor, and no fault can be found with these positions; but in large cities it has become customary to build studios on the roof or close to the roof. We will, with your permission, trace the cause of the custom, as I consider it has been largely a case of follow my leader, and what may have been very correct, because necessary, twenty years ago, has become quite unnecessary and even fatal to success at the present time. When portraiture was first started, some sixty years ago, the daguerreotype process and the lenses then in vogue necessitated the person whose portrait was required having his or her head jammed into an instrument of torture, and keeping it there quite still for half an hour or so, and this, too, in bright light out-of-doors, the long exposure determining this procedure. After a while the daguerreotype plate became, with the aid of bromine, more sensitive; also the calotype, and later the collodion process, came along, the latter bringing with it a great increase in sensitiveness; but still the exposure in dull weather was very considerable, and this in my view determined the conservatory as the form of studio, and its position on the roof in towns as being a desire to obtain the maximum quantity of light; but as a place to conduct a lady in evening dress, or for the general convenience of business, one can hardly imagine anything less suitable.

Consider only the difficulties with smoking chimneys all round in keeping the place clean and presentable, in keeping it at an equable temperature, and watertight. Consider the difficulties of a low roof, in order that the studio may withstand wind pressure, and the abomination put up with in the form of a multiplicity of blinds, in order to control a mass of glazing, handy, perhaps, for growing tomatoes under, but hardly the ideal place for practising modern portraiture or raising the public estimation of the photographer as an educated man. Probably most men will agree with these sentiments, but is it really essential that photographers should spend their lives with the smoke, up among the chimney stacks, instead of on the ground, among their fellows in business? Take a plate and underexpose it on a sitter in the studio. In nine cases out of ten it will give what is called a hard or chalky negative. This means that the high lights are still sufficiently exposed, but the shadows underexposed. Repeat the experiment with one-half or one-fourth the usual exposure, and the same result will probably happen.

Try another experiment: Take a piece of clean white blotting-paper, pin it on the studio reflector or the wall opposite the window, and photograph it, with part of the reflector or wall included. You will find that the reflector or wall, although

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white or very light in tone, will photograph as black against the white blotting-paper. What do these experiments mean? They mean, in the first place, that the reflector and studio wall, although white or light in color, are slightly yellowed by the light and the smoke and dust to which they have been exposed; and that, therefore, they reflect a very small fraction of the actinic rays—that is, photographically speaking, they are as black as ink. They also mean that in such a studio nearly the whole effect of lighting is obtained by direct light coming through the windows or blinds; or, to put it backward, it is owing to the lack of reflected light that the large extent of window area is essential.

Try another experiment: On the shade side of a sitter place a big reflector covered with clean blotting-paper, and take a photograph. You will now get a horribly flat picture, although the correct exposure is reduced maybe to one-fourth of what it is without the new reflector. Now close in your direct window light, take another photograph, and brilliancy is again recovered, combined also with very quick exposures. We may discover in this way that there are two distinct methods of lighting, one in which all except the darkest tones are obtained from the skylight, and the other in which all except the lightest tones are obtained from reflected light. In the first, you have an interior which is nearly all glass; in the second, comparatively little glass. I am afraid you are already beginning to perceive that I am forgetting myself, and rapidly falling back into an ordinary Tuesday's class lecture, for these things are A B C to the many talented photographers who are helping us with their presence to-night, and to them I offer my sincere apologies. But I am anxious to give the ill-shaped roof studio and the conservatory studio a bad name to-night, and to give the young members of the profession who later will be building studios of their own good reasons for departing from precedent, and making their studios decent brick structures, conveniently placed for business, a pride and a pleasure to work in, and comfortable and attractive to their clients.

It was the late Mr. H. P. Robinson, our most talented artist photographer, who said the side-light studio will become the studio of the future. Should not Mr. Robinson's future now be the present, and is it not evident that with modern advances in plate manufacture, in lens construction, the necessity for so much skylight, and therefore the roof studio, is now a thing of the past? I have pointed out that a small glazed area (10 feet or 12 feet long by 8 feet wide) is ample, providing that proper and frequent attention is given to the surface of the reflectors and the walls of the studio; there is also no need for them to be a glaring white; they may be almost any tint of pink, purple, or blue, and yet retain their full power of reflecting the actinic rays. If, then, it is admitted that a side-light studio with a moderate window area is efficient, the whole argument which justifies the existence of the roof studio falls to the ground, for, with the aid, if necessary, of Chappui's reflectors for the low light, a studio light of the dimensions I have suggested can be obtained on the ground or first floor almost anywhere.

Further, for the same reason, the glass or conservatory form construction can be dispensed with. Do not think I am speaking of these sidelight studios from the theoretical point of view—there are now plenty of such in use, including quite a number of my own design, all of which, I believe, are giving complete satisfaction to their owners.

We now come to our last heading—"Making a Reputation." Do we not all realize to-day that the practice of photography is becoming less and less a matter of lenses, cameras, and chemicals, and more and more a case of refinement in taste and treatment? I am not referring here to art. You may or may not be artists, but if you are honored by a sitting from a king, your photographic reproduction should show someone who is every inch a king; your reproduction of a lady should be every inch a lady; and your reproduction of a soldier every inch a soldier. On the degree of power you possess in getting this quality in your work, combined with good taste and technical excellence, so will your reputation in the main depend. Everything, therefore, which will aid you

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in this respect should be thought out, worked out, and utilized—the significance of pose, the poetry of curve, and the magic of the light play should be a never-ending study. The invaluable help which can be given by a lady of good taste in the studio—a help never yet properly recognized—should be taken full advantage of. The art of the hairdresser and the dressmaker, also, should be requestioned, for they are frequently the making of a difficult model. I do not mean that you should keep these specialists on the premises, but give the needful hint to clients. Besides this fundamental quality in your work, there are indirect ways of helping to make a name.

During the past ten years or so, and contemporaneous with the growth of amateur photography, there has sprung up annual exhibitions of photographs in every part of the country; all these have classes open to professionals, which offer excellent opportunities for self-encouragement and heightening a reputation. Again, publishing in a small way is very helpful. If there are one or two special views in your district, get good negatives, and have them reproduced and published in photogravure, which gives a quality quite unattainable by any purely photographic process.

I referred in my opening remarks to a profession being a calling requiring some degree of learning. In almost every home nowadays one of its members practices photography, and wants help and advice. You ought to be the person whom he looks upon as the real authority and to whom he comes for advice to take him out of his difficulties. Not only should everything be done to encourage the public estimation of you as an authority in the subject of your profession, but everything should also be done which prevents or discourages such estimation. This is the great defect of the roof and conservatory studio—it is almost physically impossible to keep such a place really nice, the approach, the setting, and the surroundings being all formidable enemies; at its best a box of optical tools and a workshop, and I cannot close my remarks better than by expressing the belief that no one thing would do more to raise the reputation of the profession, both individually and collectively, than the general adoption of the side-light studio, a construction which enables the photographer to take as great a pride in the æsthetic decoration of his studio as he does in his work, and with equal benefit to himself—a decoration which, I need hardly say, should not be an ideal of stuffiness and mustiness, but one of actinic lightness, of neatness, and of purity, of silver-gray distemper, white marble, and roses.

WHY AND HOW SHOULD PHOTOGRAPHERS ADVERTISE?

BY W. I. SCANDLIN.

To the first part of this question there can be but one answer, and that answer is embodied in the fact that he has expended a certain amount of money in the establishment of a business, the successful carrying on of which is wholly dependent upon the amount of business he may receive from the community in which he is located.

No sane business man will undertake to build up a business without having at the outset some prospective field in which to market his wares. Before putting capital into any new project he must have in his own mind a convincing belief that some demand exists for his output, or that a demand may be created from which his business expenses and reasonable profits may accrue. If he is wise he will lay aside a certain amount of money for the sole purpose of placing before the buying class of his community his claim for its patronage, backed up by a strong statement of his reasons for making the claim.

Once the amount of this appropriation is decided upon, which must be governed first, last, and always by the size of his pocketbook, a carefully-thought-out plan should be adopted for its judicious expenditure. This plan, adopted and put into operation, should be rigidly adhered to and carried out to the end, covering a period long enough to enable its results to become apparent. More is to be gained by the persistent following up of a fairly

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good plan of advertising than may be hoped for from the expenditure of a much larger amount of money applied to spasmodic efforts without connection to a general plan or policy.

It cannot be said of photography that its followers are debarred from advertising because it is considered unprofessional. It is, on the contrary, one of those classes of business in which advertising, judiciously applied, is not only admissible but should be encouraged and increased at every possible opportunity. The proper advertising of a photographic studio should result not only in a profitable increase of business to the photographer, but it should also raise the standard of advertising literature in the community through which it circulates, carrying on its face the same elements of artistic taste and literary excellence that it is supposed to proclaim for the photographic studio which it exploits.

A large amount of money may easily be wasted and a positive injury done the photographer who sends it out, if his advertising matter falls below the standard of artistic excellence that he claims for his photographic work. Announcements and printed matter of all kinds should be studied as carefully and issued with as much attention to detail as the daily output of the studio. It does no good to advertise a good article with indifferent or absolutely bad typography, paper, or poor taste in any of the details connected with its production. It is better policy to issue a far less number of circulars or booklets in a year, each being of good quality in material and artistic in execution, than to send out a much larger edition of cheap and poorly-prepared advertising matter. In other words, the photographer should see to it that his announcements create a favorable impression in the minds of those who see them, an impression which carries with it the thought that if his announcement is so excellent the general standard of his work must be equally high, at least.

The channels through which the photographer must reach the public are more or less restricted, owing to the fact that his field of operations is limited by a comparatively small geographical area. He must embrace every possible means of keeping his name before the people of his community, seeking to be as much as possible on the public mind and tongue in all ways that are reputable. In the local paper of his town he should be regularly represented with a three- or four-inch single-column announcement that should be strongly written and should tell a story of its own in such a concise and original form as to carry with it a strong argument why his work should be in every home of the community. It will not do to pay for the hackneyed announcement that John Smith, Photographer, is to be found at such and such a place; interest must be awakened in the fact that photographs are things which people must have, and their interest should be led to the point of believing that John Smith is the only man who can make them satisfactorily; that he, of all men, is the one most particularly fitted by nature and experience to give them what they want. Incidentally, it may be said that Smith's Studio is on such and such a corner. This advertisement should be changed every week, and the people made to expect something new each time. It may be accompanied by a series of bright local reading notices, which cost little, but which, when properly prepared, do much to convince the reading public that the man of whom they speak is a pretty important personage.

The right kind of advertising matter does not grow in every man's brain, nor, if the ideas exist there, has the ordinary photographer time to cultivate them or bring them to fruition in good, sound advertising matter. A great many of the bigger men realized this long ago, and their announcements are being framed by those who know how to do this work successfully, because they have studied it and specialized on it. These leaders have set the pace, so to speak, and, happily for the profession, it is coming to be followed very largely throughout the country. The universal verdict among those who have undertaken this method of making public their claims to the support of the art loving community is, that they no longer consider themselves equal to the preparation of their advertising matter. The steady and healthy growth of their business, the acquisition of new customers, always from the better class of the community, and the accompanying

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possibility of putting out a higher-priced list, has become apparent to them, and the relief from the care and trouble of changing copy, preparing new matter for their locals, and working out the routine of an advertising policy, no matter how inconsiderable, has enabled them to devote better attention to the necessities of their immediate business.

There are many more reasons why and how a photographer should advertise, but the limit of the present article has been reached, and they will have to lay over until another time.

THE MODIFICATION OF PLATINUM PRINTS.

BY CHAPMAN JONES.

A PLATINUM print has a charm of its own, from whatever point of view it is regarded. It carries with it its own guarantee of permanency, and this can be said of no other kind of photograph. Even a carbon print *may* be made with a changeable pigment, and at its best consists of a paper and a gelatine film, both of which are open to attack. But a platinum print can only be affected in a destructive way by attacking the paper that supports the image; and this paper must be of excellent quality, for otherwise the sensitive material would be interfered with and the print spoilt. It is not for me to say anything as to the artistic charms of a platinum print, nor do I wish, for these are fully admitted on every hand.

A fine platinum print is so excellent and unique in its characteristics that it is with a feeling almost akin to that engendered by sacrilege that one hears of any suggestions to tamper with it. The best advice that can be given is to leave it alone. But photographers never will let good alone when they have the faintest idea that it may be possible to make it better, and too often it is not improvement that they seek so much as variation. There is no modification of a platinum print that I know of that is so good as the simple, unsophisticated thing itself. A poor print may perhaps be improved, but it is much better to throw away the poor print and make a good one. At the same time, occasions may arise when modifications will be welcome, and it is at least possible that they may serve a useful purpose.

If, for example, it is desired to make the detail of a print more conspicuous—as might well be the case when dealing with a technical subject, getting a depth of tint approximating to that yielded by gelatine printing-out papers—then the waxing of the print may be distinctly useful. Any of the "encaustic paste" formulæ may be used, applying the material to the mounted print by means of a piece of flannel with a light rubbing motion, just as a French polisher puts on the final shine. I used to think that I was the first to indicate the occasional advantage of this process, but Mr. Herbert Berkeley referred to a modified and partial use of waxing in 1881. He suggested applying a solution of wax or paraffin wax in benzene, or in ether and alcohol, by means of a pad of cotton-wool to the deep shadows only, and so giving them additional vigor. He specifies that the half-tones were not to be treated, and that the application was to be so sparing that even in the shadows the surface was to remain matt. But the best polish that can be produced with "encaustic paste" will not equal the gloss of the varnish on an oil painting; and if the increased depth of the tint is desirable at all, the high-lights may be improved as much as the shadows.

It is easy to deposit a further quantity of metal upon the image of a platinum print, by adopting the same principle of procedure as in the "re-development" of a collodion plate, and in Wellington's silver process for the intensification of gelatine negatives, and in the ordinary process of depositing silver on glass in the making of mirrors. That is, a solution is prepared which is just about to give a precipitate of the metal to be deposited, but that will not deposit it without the additional disturbing influence of some slight stimulus. Just as strings stretched across a solution of cane

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sugar that is about to crystallize will become covered with crystals, producing sugar candy, so the platinum image of a print will determine the separation of the metal from a suitable solution, and the metal will deposit on the image approximately in proportion to the density of the image. Dr. E. Vogel stated, about fifteen years ago, that he had succeeded in intensifying a print by depositing more platinum on it, using a very weak solution of potassium chloroplatinite, to which was added a small quantity of ferrous oxalate developer to effect its reduction. But this process has failed in the hands of other experimentalists.

The method of depositing gold we owe to Mr. A. W. Dollond. The moistened print is evenly smeared over with glycerine, using either the finger-end or a soft brush, and then a very weak and slightly acid solution of gold chloride is mixed with the glycerine by means of a camel's-hair brush (*Journal of the Photographic Society*, N. S., xviii., 190). The gold deposited is blue-black. All who have had experience with gold solutions will know that a very minute amount of gold in a soluble form will give a marked color or stain, and that the color will sometimes not appear for a long time, and may go on increasing for months. To avoid such a catastrophe, Mr. Dollond treats the print back and front with a metol developer before the final washing of it. This reduces any remaining gold compound to the metallic state. Silver may be deposited by the use of a solution of a developing agent, such as hydroquinone, pyrogallic acid, etc., slightly acidified to retard its action, to which a little silver nitrate is added. The brownish-red ferrocyanide of uranium may be deposited by the use of an ordinary uranium toning solution, and this has been proposed as a substitute for the usual method of obtaining sepia prints. But this process appears to be of a very uncertain character, and it is natural that it should be so, because there is no specific reducing agent present.

It needs but a moment's thought to understand that however successful the toning or intensification may be, the result is no longer a platinum print, and that to describe it as such would be deceptive. Exception might perhaps be made in favor of the intensification with gold, seeing that this metal is almost as permanent as platinum; but still gold is not platinum, and, as before remarked, its solutions have staining properties peculiar to itself. It is much to be preferred that all methods of adding to the platinum image should be avoided when making prints that are likely ever to possess any importance.

A method of toning or coloring platinum prints that belongs to a different category from any above referred to is the catechu toning process of Mr. Packham. Here advantage is taken of the small amount of iron that remains in the print, or methods are selected that lead to the leaving of rather more than the minimum quantity, so that the effect may be increased. The iron with the catechu extract forms a brownish substance, which modifies the color of the print. But the color so produced is not permanent in the light, and, of course, is susceptible to change by the action of chemical reagents. It is difficult to see, therefore, why it should not come under the same condemnation as the other processes.

The substitution of other things for a part of the platinum has been carried to an extreme in the proposal that has been made from time to time to develop the exposed platinum paper with a solution of ferricyanide of potassium instead of the usual oxalate solution. This method would probably work better if there were no platinum at all in the paper, for it is a matter of the iron salt only. I have noticed a tendency sometimes to regard such prints as in some way superior to the common ferro-prussiate prints—with which, of course, they are strictly comparable—and I think they have been called blue platinum prints. It would be well if all proposals to modify processes could be referred to some competent person before publication, so that absurd suggestions and alterations that make a radical difference in the result might be more fully described if they had to be published at all. So far as platinum printing is concerned, it is advisable to have nothing to do with any toning, coloring, or intensification process, but if the print is weak, to make another, and if the colors that platinum will give—namely, the range from

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a cold blue-black through warm blacks to the well-known sepia tint—are not satisfactory, to try some other process altogether, rather than to palm off as a platinum print a thing that is partly something else.—*Amateur Photographer* (London).

EVERLASTING WAITING.

BUSINESS life to-day largely consists of "everlasting waiting," and only those who know how to wait are able to get along. We wait for orders, we wait for people to help us to execute them, and when we have executed them we inevitably have to wait for the money. We wait for fame, fortune, honor, recompense, reward, and even thanks—everything that makes life worth striving for—and too often we wait in vain, until the heart grows sick and weary, and we wait only for the rest, which we know will most surely come. Yes, it's wait, wait, waiting—everlasting waiting—with most of us, even the successful ones. Even the millionaire must wait and fret and fume sometimes, because with all his wealth he cannot command a "genii of the lamp" who can respond to his instant bidding. Providence seems to have ordained things on the principle of waiting, and all nature is always waiting—waiting for the changing seasons, the seedtimes and the harvests. We wait for things to grow, to be built up, to flourish, and also to die and become obsolete. We wait for new laws, new institutions, new men, and new measures. The insidious whisper is always in our ears, "Better wait," "Let it wait," "No harm in waiting." So one man waits on another, and thus the world is in a state of restless waiting. The curse of indecision seems to be on mankind.

Half the worries and troubles of business life are the result of this everlasting waiting. Young men, keen, eager, and ambitious, launch out into business for themselves with a little capital, which they fondly hope will tide them over the time of waiting for business and money to come in. They get lots of promises, but have to wait in vain for the fulfilment; they go on vainly hoping that luck will come, until, at last, they are disillusioned by the cold realities and formalities of the bankruptcy court. Many hundreds, nay, thousands, of businesses "go under" every year simply because their owners cannot wait. The majority of partnerships are dissolved because one of the partners becomes tired of waiting for the sharing up. Men change about from one business to another because they cannot wait for the advancement which seems to come too slowly.

Young men prove failures in business too often because they do not know how to wait—that is to say, they have not the staying power, the patience, and the carefulness to wait until difficulties are surmounted.

Commercial travellers, perhaps, of all people, know what it is to wait, and the criterion of a successful man in this line is the ability to know when to wait, how long to wait, and whether the promises of a prospective customer are worth waiting for. The majority of travellers bring in nothing but promises which one would have to wait till doomsday to get realized. The same thing holds good with debt-collectors. They probably never heard the dictum of the late Commissioner Kerr: "The man who promises to pay his debts never does it. The man who does it pays instead of promising."

The British workingman is a past master in the art of waiting. He will wait under any conceivable pretence or excuse so long as he is paid for his time. He will wait for material, for tools, for instructions, and for the arrival of a mate to help him to wait for something or some one else. True there are certain things he doesn't wait for: you don't find him waiting for the last stroke of the clock at knocking-off or meal times, and he has a rooted objection to waiting for his pay on Saturdays.

If you call a clerk into your office and ask him to do a thing, it is just a ten-to-one chance that he will ask you if it can wait until he has done something else. If you ask another man why he hasn't done this, that, or the other, his readiest answer will be that he thought it could wait.

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If you order some goods, about the first thing you are asked is how long you can wait, and, having got a promise of delivery, you will probably have to wait beyond the time. It is not, perhaps, the traders' fault; someone keeps him waiting because some other party has done the same; and so it permeates and filters through the whole of our business system, sapping the life out of every trade and industry, and eventually threatening our national commercial prosperity. Other nations, more active, more resolute, more pushing, take advantage of our predilection for waiting and steal a march on us.

It is all very well to console one's self with the philosophic reflection that "everything comes to him who waits." There is such a thing as waiting too long, and the better way of looking at the matter is to make up your mind not to wait for anything if you can help it. Go and do something else. Get right into your system a positive aversion, a downright prejudice, against waiting. Instil it into everybody around you; tell them to go anywhere, do anything, pay anything, but don't wait. DO IT NOW!

Why, half the lawsuits are due to this fatal policy of waiting, and doctors and undertakers could never live if it were not for this human habit of putting things off. It's the loitering train that comes into collision with the express, and many an accident in daily life is a result of waiting too long. Many an old adage has been hurled at this abominable habit of procrastination, but the world seems to grow no wiser. We go on spending money on all kinds of time and labor-saving appliances, but forget that where the time and the money usually go is in this everlasting waiting. The labor-saving machine is doing no good if it is most of the time waiting for work.

It is heart-breaking to think of the national and individual wealth that is being wasted by this policy of waiting, this awful sin of our commercial life; and it is all the more saddening to the conscientious man who is constantly fighting against this dilatoriness, but finds the struggle so terribly unequal when the whole world seems to conspire to uphold this rotten system of waiting — everlasting waiting. — *Process Work.*

SOME OBSERVATIONS ON LOCAL INTENSIFICATION.

THE process known to photographers as "intensification," like its near relative "reduction," is, so far as we are concerned with it, principally intended as a way or means by which a worker may, with a little care, improve the printing quality of any deficient negatives he may possess. It is sometimes necessary, in order that that improvement may be obtained, to subject the entire negative to intensification. In this article we will refer those of our readers who desire information on this point to any of the many elementary manuals on the subject of photography, where they will find explicit instructions given. Here it will be our aim to record our observations on the local treatment required when local intensification of the negative is decided upon. Of course it is at once granted by our readers that many of the negatives made during the year would be vastly improved if this or that portion or object were kept back in the printing.

Is it not on this account that many workers attach papier mineral, and work with the stump thereon, while others coat the glass side with matt varnish and remove it from the portions they wish to print as before, leaving it on those parts to be held back?

Reader, have you ever wondered why so little on this subject of "local intensification" has been published in the journals of our art-science? Personally, we have. That it is a most difficult procedure—the local treatment of a negative in intensification—goes without saying. The failures that have taken place in the writer's experience have done so chiefly because of the methods chosen carrying difficulties with them, and the nature of the gelatin film of the negative.

When we first started work of this kind we set to work locally with a fine camel's-hair brush, using the negative in a dry state, and painting on a single-solution in-

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tensifier with considerable care, just at those portions we wanted to improve. The results were once or twice all that any person would want, but as a general rule the hard outlines of the intensified portion were inclined to show in prints, and necessitated "sunning down" and other dodges. Shortly after this we were recommended to try what the addition of "gum water" (water with some gum acacia dissolved in it) would do toward giving us more command over the process, and though it certainly gave us some improvement in so far as the controlling and softening of these outlines went, still we wished for something more certain.

Next we thought of soaking the film of the negative in water previous to starting work, and then surface-drying the same. We gave this a trial, with still better results, though, be it said, we never were certain that our work would be a success. In these experiments the intensifier we used was that sold by the dealers as "Agfa," a patent preparation, and if any of our readers wish to do likewise let us urge them to make quite a number of trials on their useless negatives—if they have any. Perhaps it will be as well to mention that we were always successful when treating large portions of negatives, such as big foregrounds, by this method.

Quite recently, however, we paid a visit to the workroom of a photographic friend, and burst in upon him when he was proceeding with the local treatment of some landscape negatives. His method, which since that time we have practically wrought with ourselves, and with the most satisfactory results, is to simply intensify the entire negative with a uranium intensifier, and taking advantage of the fact that with this method of intensification over-intensification may be reduced or entirely removed by using a solution of carbonate of ammonium or ammonia and water, because such solutions discharge the color from the image to locally reduce such parts as may be satisfactory, thus leaving the remaining portions intensified.

As many workers do not use the uranium method of intensification, and are therefore not well acquainted with its points, we will detail the process to some length. First, we must point out that negatives done by it have a very red color, which is very apt to deceive the photographer unacquainted with it. Its printing opacity is extremely great, and for that reason care must be exercised to note that over-intensification does not take place, though for the purpose we are considering it ought to be carried slightly further than if the intensification were intended to be a general one. The negative must be perfectly free from hypo, and for this purpose may, with advantage, be subjected to extra washing. Many formulæ have been published, every one of them reliable, no doubt. Our friend's consisted of:

Solution 1: Uranium nitrate, 10 grains; water to make two ounces.

Solution 2: Ferricyanide of potassium (red prussiate), 10 grains; water to make two ounces.

Solution 3: Glacial acetic acid, 1 drachm; water to make two ounces.

The well-washed negative is immersed in a solution made up of equal parts of these three solutions, the dish containing which should be rocked occasionally until the intensity wanted is secured. When the intensification has gone sufficiently far, the negative is removed from the dish and well washed for five or ten minutes.

When to stop washing depends upon how soon the "greasiness" of the surface of the film of the negative is got rid of. Whenever this "greasiness" (which results from the use of the glacial acetic acid) disappears the washing has been sufficient. The washing water must on no account be allowed to fall upon the plate with force, as that produces markings and streaks.

When this washing is finished, set the negative up to drain in a rack until it is "surface dry."

It is very important that it is no more than "surface dry" if the best results are to be got.

Now make up a solution of ammonia .880 half ounce, water to make 12 ounces, and proceed to carefully go over whatever portions it is not desired to intensify with a fine camel's-hair brush. A No. 0 water-color sable is what we use personally, and we have found it thoroughly efficient.

Under this treatment the intensification of these parts will be seen to disappear,

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and when the process of painting these local bits has been completed and the color has been discharged, the negative must again be washed under water. During this last washing—if the intensification has been carried slightly further than usual, as we recommended in an early portion of this article—the worker can control the degree of partial intensification to a great extent, for the density produced by uranium gradually washes away, and in this washing away the outlines, or junctions of the parts intensified, and those treated by the ammonia solution, are softened down and made harmonious. This method of partial intensification is one which we can thoroughly recommend to those wishful to get good results, capable of giving entire satisfaction to the most expert photographer, and if it tends to increase the interest in this neglected bit of technical procedure we will have been well repaid.—*Photographic Chronicle.*

FINISHING PRINTS IN MONOCHROME.

(From the *Photographic Chronicle.*)

I.

MONOCHROME, as its name implies, means one color, and as the most popular styles of plain enlargements now in vogue are worked up by one pigment, *i. e.*, black, it is in relation to that mode of finishing—designated monochrome by the high-class photographers, but more generally known to the trade as B. and W., or Black and White—I propose in this series to demonstrate to my younger readers how to make what might otherwise appear to them but an indifferent piece of work, into a presentable and pleasing picture.

There is one item in connection with this class of finishing that appertains more or less to all water-color work, that what is only the means to attain an end is viewed by the unlearned on the subject as really the object to be attained, and that is what is known by the name of stippling.

All photographs, and especially those on a gelatine basis, do not take kindly to water-coloring; this has always been a very serious drawback to all highly finished work in this medium, even in the old albumenized paper days, dodges of all sorts having been contrived in order to reduce the difficulties arising, and these same remarks apply to working on ivory miniatures, whether on a photo-basis or not, and with the latter the old-fashioned miniature painters experienced the same difficulty in getting the color to lay evenly on the surface of the pure ivory, hence they adopted special means to attain the desired end, and in two different methods: one by minute cross-hatchings, filling in the spaces between the lines with small dots, or by dots alone, dotting in the various tones, half-tones, etc., by the aid of a powerful glass, that when seen by the natural eye it should present a smooth and harmonious entirety.

The photographic colorist has adopted for his work the cross-hatching system, and thus I wish to distinctly impress on all young novices, that when they work up the shadows, half-tones, etc., on a bromide enlargement they do so not from a matter of choice, but because they cannot get the pigments when used in a wet state to adhere in a satisfactory manner, unless they employ this method of working.

In finishing in oils, as I have before stated, the colors can be so applied as to give as much smoothness as desired, without any hindrance, but it is not so in water-coloring, so that the cross-hatching, technically known as stippling, must be employed if we desire to obtain any satisfactory results.

Photographers for want of a special knowledge of these matters are frequently "at sea" as to why when an artist is a good oil painter he is not as equally satisfactory in water-colors, and this arises from the difference existing in the "technique" employed in the two instances. For example, a first-class hand at oils, bold and vigorous in his work, can go to nature and make quick and rapid transcripts therefrom in water-colors, but his sketches for the most part will be in the broad and

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washy style, just for his own guidance hereafter; but that style of work would not do, however grand and excellent it might be, for an enlarged portrait on bromide paper, the color would be all streaks and patches, and this is why stippling must be used.

The original idea of an enlargement finished in black and white was to make it as much as possible to resemble a steel-plate engraving, and thus place before the masses what had previously been only purchasable by the higher classes; and one difficulty experienced was to obtain a smooth and even background around the head on both sides (these remarks refer to air-brush portraiture), and many and various have been the means and media employed for that purpose, one of the most prominent being our old friend *velours au sauce*, a preparation of lampblack; but this always has a somewhat brownish tinge, which invariably clashes with the gray tones of the enlargement, and if much were used it gave the picture a sooty appearance, and further it would not amalgamate with the wet colors. Retouching and other forms of lead have also been tried, and these were found objectionable because, like that used for cleaning grates, if much rubbed they presented a polished surface, so that after some cogitation and thought I placed myself in communication with that well-known and old-established firm of artists' colormen, Messrs. Reeves & Son, Ltd., who, after long and exhaustive experiments, have succeeded in "hitting the right nail on the head," and bringing before the profession a new preparation, named by them "Reelœvis," in two shades, numbered 1 and 2. At their request I have had the pleasure of trying and using it for my own work, and I have not the slightest hesitation in stating that it is capable of the most beautiful results, from the most delicate shades of gray to as deep a tone of black as may be required. Then, again, it works exceedingly well with the wet colors, and there is no doubt that it will prove a great boon to all monochrome workers, and when once used will always give the highest possible satisfaction.

(To be continued.)

COPYING.

BY A. D. PRETZL.

THE most useful type of all lenses for copying is the anastigmat, which term includes all the newer lenses, which, with a large aperture, possess a flat field. Of the older type of lenses, the old Ross portable symmetrical is one of the best, as it possesses an unusually flat field. As regards the focus of the lens, there is not much to be said, though personally I prefer to use one of as long a focus as possible, as the illumination at the corners is far better than with an extremely short focus lens; the only case in which a long focus is sometimes objectionable is when copying full size, when the necessary extension of camera bellows becomes too great.

It saves a lot of trouble, if one, before starting work, calculates out the conjugate foci for the lens that is going to be used. In every copy of the *British Journal Almanac* will be found the necessary table giving the conjugate foci for reduction, but it may not be any harm to give the well-known rule. Divide the longer side of the subject by the longer side of the desired reduction, and the result will be the times of reduction; to this add one and multiply by the focus of the lens; the result is the distance between the lens and subject. To find the lesser conjugate focus, or the necessary extension of camera, divide the greater conjugate focus by the times of reduction.

It may happen that only one camera is available, but if there is a choice, one of the old-fashioned square bellows type, focusing at the back is to be preferred to the front focusing. In all cases the focusing screen should be ruled with parallel lines in both directions, and I have found it a great convenience to rule

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these lines at intervals of one inch, and mark also the half and quarter inches by short lines, and further, to commence the numbering of these lines from the centre of the focusing screen, so that if it is required to reduce the copy to a given size one can easily see the measure on the focusing screen.

Above all things, for really critical sharpness, it is highly desirable to cement two microscopic covering glasses to the ground-glass, one at the centre, and the other in one corner of the screen. It is necessary to first mark the ground glass with a cross in lead-pencil, and then, if the focusing magnifier is set so that this is in focus, one can be quite sure that the image is in focus on the plane of the ground glass. At the risk of telling an oft-told tale, the following is my method of cementing these glasses down: The focusing screen is removed entirely from the back, and warmed over gas or in the oven till hot, then a good-sized drop of Canada balsam is placed in position, the cover glass dropped on to it, and then gently pressed down with a wine cork; if the balsam does not spread to the edge of the cover-glass the whole is put into the oven and heated still further, and again pressed down. Any balsam exuded should be wiped off, when quite set, with a rag wetted with spirit.

The ideal process for the production of black and white or line work is wet collodion, but equally good results can be obtained on dry plates, when you know how to do it. The only plate that is suitable for this class of work is the slow photo-mechanical plate. Sometimes it happens that for lecture purposes it is required to reduce a diagram to the regulation lantern size, then one can use any of the commercial lantern plates for black tones with equally good results as the photo-mechanical plate.

There are two distinct methods of working, the one to use as large a lens aperture as possible, and develop as long as possible without any deposit showing in the lines; the other to use a small aperture, a blue screen, and develop till extreme density is obtained, regardless of the lines, and then reduce with Howard Farmer's reducer. Personally, I prefer the former method, and rarely fail to obtain full density with bare glass.

The best developer for this work is undoubtedly one suggested by Lumière, which is without alkali and bromide, and gives extreme density with correct exposure; the formula is:

Hydroquinone	8 grains.
Sodium sulphite	80 grains.
Formaline	10 grains.
Distilled water to	1 oz.

Should it happen that after fixing it is found that there is not quite enough density—and this only occurs with incorrect exposure—it is extremely easy to intensify and for preference with the potassio-silver cyanide formula.

Pencil drawings sometimes give trouble by a deposit in the lines, though I have found it advantageous to disregard this while developing and then reduce. A few months back I believe that at the Photographic Club Mr. A. Mackie suggested placing a piece of fine ground-glass over the pencil drawing and copying through this, as it made the pencilling photograph cleaner. This, however, I have not tried.

Blue or ferro-prussiate prints sometimes give a lot of trouble, and the best method of working I have found is to use a slow isochromatic plate and a yellow screen, this being sufficiently deep to make the blue print, when examined visually, look a deep dirty green.

Of all the troublesome things to copy, miniatures, or other pictures from which one must not remove the convex glasses with which they are covered, are the worst. It seems that, light them how one will, there is sure to be a reflection. I have got over this trouble to a great extent by hanging tissue paper round the miniature; in fact, placing the same at the bottom of a tunnel of tissue paper; this softens the reflections a good deal. Of course, the proper thing to use would be a Nicol prism, but these of reasonable size are not to be picked up every day.

For copying ordinary photographic prints a plate of medium rapidity should be used. Frequently faded prints are brought to be copied, and then we must have recourse to a blue screen. Very pale blue glass may be obtained, but it is easier

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to make a screen by staining a plate, as will be described hereafter, with methylene blue; only a very pale tint is wanted, and the depth of the screen can be easily varied if aniline dyes are used.

It is almost unnecessary to point out the necessity of insuring the even lighting of any subject to be copied. In a studio this is not difficult, but is far more difficult in a private house, and it will frequently be found more advantageous to work out-of-doors. When we come to copy colored objects, the question of the illuminant is far more important, and it may be considered as an axiom that the more brilliant the illumination the better will be the rendering of the colors, and therefore sunlight is to be chosen, if possible. For old masters, or those old paintings which have become mellowed by time into rich deep browns, sunlight is the only illuminant which will give a satisfactory rendering of the same, assuming, of course, that arc lamps are not at hand, as they usually are not in the majority of cases. For small pictures magnesium ribbon may be used, but for large and deep-toned pictures the quantity required is considerable. For small pictures, whether in oil or water-color, if of the modern schools, and thus brilliant in coloring, successful work may be done with two oil lamps or incandescent gas burners, placed one on each side of the picture, with a dark shade placed on that side of the lights next the camera. For such work I use the largest sheet of Bristol board folded in half, one side being left white to act as a reflector, the other being covered with black needle paper, so as not to reflect light into the lens. If lights are used in this way, whether oil, gas, or magnesium, they must be placed one on each side of the picture, and as near as possible so as not to be included by the lens; if placed by the side of the lens, far more reflections are caused.

Of course one of the most important questions with regard to the copying of colored subjects is the question of plates, and for the best rendering the so-called panchromatic plates are the best; these require rather careful handling in the dark-room, as most of the ordinary dark-room media will fog them.

Next to the plates comes the question of the screens for use with the same. Considerable diversity of opinion exists as to the best place for the screen, but if of optically worked glass it is not of much moment, nor is this important if very thin white patent plate be used, but focusing must be effected with the screen in position. A very convenient way of using the screen is in contact with the plate in the dark slide; if this is done, of course allowance must be made for this in focusing. It can also be placed in the camera back, and not in contact with the plate. If this plan is adopted, the simplest way to prepare the screens is to use a useless negative, and remove the silver image by means of hypo and ferricyanide. It is necessary, of course, to choose a negative on a piece of good glass.

If glass is to be coated with gelatine, a 10 per cent. solution should be made, and it is advisable to use a good emulsion gelatine, such as Heinrich's, Drescher's, or Stoess'; it is as well to add a little carbolic acid, xylol, or thymol to the solution to prevent it from spotting while drying. Fifteen minims should be allowed to each square inch, and the solution should be about 100° F. for coating. There is no difficulty in coating this quantity, proceeding just as with collodion. It is important to level the glasses for setting, and this can be readily done by placing on a larger slab, which has been levelled by three wedges. The gelatine coating must be allowed to dry completely before staining.

The stains to use may practically be considered as confined to the yellow aniline dyes, and brilliant yellow, uranine, naphthol, yellow, auramine green, metanil yellow, acridine yellow, and possibly aurantia, may be chosen from; brilliant yellow will generally be sufficient for all ordinary work if a little erythrosine be obtained. It is immaterial what strength the solutions are, but 1 per cent. is convenient.—*British Journal of Photography.*

THE sale of Mr. Ryder's book, *Voigtländer and I*, has been phenomenal, hundreds of copies being subscribed for before publication. The work well deserves its popularity, and we hope it will run through several editions.

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PORTRAIT OF A CHILD
By S. Aune, Portland, Oregon

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GROUP OF BUTCHERS' RETAIL WAGONS

Commercial Photography, showing the facilities of a firm

By Ernest Gall, Adelaide, South Australia

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PORTRAIT

By Fred. Boissonas, Geneva

(From DAS ATELIER, Berlin .

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SUMMER TIME IN VERMONT
By Brehmer Bros., Rutland, Vt.

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YOUNG FAVORITES

Copyright 1902 by James H. McCorkle

Canaseraga, N. Y.

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A DIFFICULT PASSAGE

By Whitney & Son Cambridgeport, Mass.

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FIGURE PORTRAIT
By Oscar Suck, Carlsruhe
(From DAS ATELIER, Berlin)

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A SHEPHERD AND HIS FLOCK

Copyright 1901 by A. Marshall, Boston

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"VOIGTLÄNDER AND I."

Mr. J. F. Ryder's New Book.

On page 261 of *Photographic Mosaics*, 1900, appeared an article by Mr. J. F. Ryder, entitled "Palette *vs.* Camera," which he said was "from a forthcoming work," supposed to be by himself, and which he meant to be *Voigtländer and I.* Ever since then the fraternity has been on the lookout for this "work," and with no little patience waited for its finish, because the sample alluded to above made them eager *for more*.

We are glad to announce that the "work" is ready now, and that an advance copy lies at our pen-hand as we write. It is a good book—one that will interest every votary of the camera, be he amateur or adept—and be profitable to every man in photography, and everyone of the *contrary* sex. (No offence intended.)

When the author's mind was convinced that he was called upon to write this book he began the labor. After a few sheets were written he stumbled. He did not know what title to give his effort, and making a bluff at it gave it a name almost as long as one of the chapters of the book. Then he sent the few sheets to us for advice and help. We at once gave it as our opinion that no dealer would ever

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keep or sell a book with such a long title; no photographer would ever write or ask for it, because that would absorb too much valuable time. So, as the matter of the book so far was so good, we suggested a title with more brevity in it. Finally, *Voigtländer and I* was the title chosen, and the good work went on.

This explanation is publicly given in the preface: "I may as well tell you at once, *Voigtländer* was my camera, and *I* am

"Yours truly, J. F. RYDER."

Now, friendly reader, you know a good deal about the book already, for the majority of you know Mr. Ryder, and you all know *Voigtländer*, a name that was engraved upon about every lens in the junior days of photography.

In *Voigtländer and I* we find an account of the doings and misdoings of a typical, enterprising, practical, popular photographer, whose course in the art ran on from 1847 to 1902; from the days of "quick stuff" to those of collodion and gelatine; from the time when the fumes of iodine flashed a picture into existence to the use of emulsions and dry plates; from the days of a sixty-second exposure to the snapshot; from the time when our art had "no primer" or other literature to these days of books, magazines, societies, and conventions; from the days when to get a new item of practice was to pay great, good money for it, to these days of "give all—take all;" from the time when hours were spent with a "dry buff" to do what the burnisher does in a second now—metal was used then—we use paper now; from those dear times when "bad indigo put into a shirt by a careless laundryman caused solarization" to these, when backing of the plates is adopted to prevent a similar "stick."

Then of his own more personal experience Mr. Ryder makes confession in detail. He is at his best now; he tells that his "first skylight was an open door;" how he made his "first gold;" when he carried his traps or outfit to farmhouses, and made "likenesses;" thence into the home of the village merchant and postmaster; from there to a hotel in North Pennsylvania, where the ball-room was placed at his service for studio use, and the "quilting bee" all upset by his appearance; then by mountain stage-coach (his outfit always along) to the home of a rich friend, where the neighbors flocked to him for sittings, and, finally, he reached Ohio. Full of incident and accident, now, this strange career goes on until our enthusiastic young artist holds up at the first Mormon Temple at Kirkland, O. There, the saints all gone, he turns out the "images" of all who apply to him. At one time he heard of the existence of a fine daguerreotype in a distant place, and "travelled through three States to see it," showing the same spirit that some of our modern workers do in visiting our conventions.

From "labor to refreshment," then; after a day of exciting labor, the "marvel" sauntered across the bridge through the paths of the meadows, *where*—see p. 30. Wherever he went he "was always finding models"—wherever there was light and people—a good habit.

Eventually arriving at Cleveland, he had experiences both rich and rare. We are given anecdotes of great people who there faced *Voigtländer* in the studio of *I*, and are treated to revelations of his business ventures and interviews with President Garfield, Artemus Ward, Bret Harte, Josh Billings, the "Sweet Singer of Michigan," Willard, the painter of "Yankee Doodle," and to accounts of the compliments and comfortings which came to our artist from such noted patrons. Altogether, we are treated to pages of photographic lore, anecdotes, stories, etc., that are as funny and as enjoyable as the stories of *Uncle Remus*.

Nothing seems to have been forgotten. Mr. Ryder passed through it all, and has produced a most entertaining work. More than this, such chapters as XII. (part of which we are permitted to give on another page) are well worthy of the thoughtful attention of our modern workers, old and young. The engravings from all sorts of photographic subjects are fine, were selected from all over the country, and count up one hundred or more.

A fine portrait of Mr. Ryder and an introduction by Professor Griffith add greatly to the interest of the book and enhance its value. The camera-worker who does not quickly obtain *Voigtländer and I*, read and study it *well*, *soon* misses a great ad-

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vantage to himself, and promptly falls out of date. Then read it, get your patrons to read it, and secure it for a Christmas present to all you can. Mr. Ryder tells some things that are not of his business and none of ours. As Artemus Ward would say, that, perhaps, "is why he tells them."

Permit us to commend Chapter XXVI., "LUCK AND WORK," also for an early reading. We expect to return to this subject again and again, and so for the present desist. We wish and predict great success for *Voigtländer and I.* The "likenesses" of this congenial twain are given above—taken for our own especial use since the book went to press.

INCIDENTAL LIGHTING.

An Extract from "Voigtländer and I."*

BY JAMES F. RYDER.

As the dawn comes out of darkness to awaken the day, so comes the faculty of observation and noting. What had been a blank takes form and definiteness. I began to see faces of men, women, and children differently than I had done. I began to observe. It did not occur to me that I should do it, but gradually it came to be a habit, and was resolved into a study. What one sees that may be helpful in his business or profession to adopt and store away for future needs are really additions to his capital. My study was to note how light fell upon the face and how the shadows were made. I quickly recognized and accepted what seemed correct and desirable, at the same time rejecting the incorrect. I was always seeking and adapting good lighting for portraits. That portion of the human world one sees is an open school—every face is a lesson offered gratuitously. The study is never a task, but always a pleasure, pursued without effort and unconsciously—an unceasing habit. Where could be found a study of such interest as the human face and head? Of the millions who people the earth, no two are exactly alike, a distinctive character to each. A man does not necessarily wear a wart upon his nose to distinguish him from other men. The wonder of God's creation could hardly be more significant than in this particular. Nature has stamped its trademark on every human face. Students in physiognomy, who study deeply and sincerely, scrutinize faces more thoroughly than do other men. The evil passions of brutal, hardened hearts, the vengeful spirit, the treacherous, vindictive spite, the flashing eyes, the corrugated brow, the compressed lip, the expanding nostril, the clenched jaw, the murderous thought, are indexed in the faces of some; as also the generous, sympathetic, kindly promptings, the pleasant eye, the beaming smile, the welcoming spirit which springs out to meet and greet, are found in the faces of others. Wonderful study, truly. We find the rascal and hypocrite to be a poor imitation of a true and manly man. I found my models in men at their desks, behind counters, in cars, in church, at the work-bench—wherever there was light and people, there was my school. In the office of the business man at his desk, while discussing a trivial or important matter, I note how the light falls upon his face. I note from whence it comes, how it is distributed. I adapt the lighting for a portrait. If, unconsciously, he turns his head toward or from the source, he gives me a more or less desirable change in the distribution and blending of shadows. He is my model and my study. He is posing to me without knowing it. The child with whom I am making friends, whether he be shy or fearless, in the innocence of his little heart as he looks up, down, or askance, has given me a pose and expression which delight me, and which in my mind are transferred to the camera. The stranger I meet upon the street who inquires for the City Hall has given me a hasty sitting. I quite liked his face—while asking me a common question he was doing

* Voigtländer and I. A story of Fifty-two Years in Photography. By James F. Ryder. Pp. 115. 6 x 9; 120 illustrations; cloth bound, $2.50 postpaid. Edward L. Wilson, New York.

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me a great service. Like Dickens' "little Jennie Wren," I was always "trying on," and have a collection of mind images too great to be catalogued, and yet the work goes steadily on. It gives the student valuable training. This study has led me to observation beyond the camera or its application to photography, and is in line of interest to the ladies. Nature says they are of the gentler and softer sex; endowed with finer sensibilities, gentler and sweeter natures, more sympathetic and more refined. Without venturing to dispute so great an authority, we admit the claim and accede to it. We recognize in woman the cream of God's creation. From the cradle to the grave she is our dearest blessing. The little breathing bud in her cradle holds our hearts in her tiny hands, she is our princess, we her slave. The "wee tot" who runs to meet us with merry heart, and gives us welcome to our home, is the brightest sunshine and our sweetest pleasure—bless her! The maiden sweet and shy, just realizing that she has a heart; trusting, innocent, pure, honors her father and her mother—bless her dear heart. The wife, the mother, the true woman, the maker of a happy home, faithful, loyal, unselfish—bless her noble heart. The dear old grandmother in her easy chair, sweet in her lavender and laces; proud of her great brood of three generations; full of stories for the children; loved by all, seeing Heaven plainer as she nears it—bless her dear old heart.

To such as these should come only the eider-down of kindness, the soft breath of laden fields—all that contributes to harmony should be theirs. Instead of rough winds, the gentle breeze. Rather than a blaze of light, a soft subdued illumination, a light which is mixed with shadow, a kindly mellow light, ladies, is best for you—the soft light conceals what a harsh or brilliant light discloses. Few people pay attention to or make a study of light and lighting. As "there are sermons in stones," there also are lessons in the shadow of a hitching-post. Knowledge and ignorance go hand in hand. Light is both an enemy and a friend, according as it may be used. We know it comes from the heavens rather than out of the ground, yet choose to force it up hill rather than take it first hand from the Creator. The manner of admitting light into buildings and homes is faulty in the sense of giving best effects. Windows should be high in rooms and light admitted through the upper portions, rather than the lower. Rooms should be filled with soft light to give cheer and health. Instead of dark or opaque shades and heavy thick hangings, through which light can hardly struggle, pleasant buff shades which are luminous and convey light, aided by muslin or lace curtains, are best for homes. Shades hung to pull up from the bottom rather than down from above are preferable. As a rule, valuable pictures are given the gloom of hanging space, while the floors are given the light. Dark wall papers are depressing, while lighter tints and colors impart cheer and buoyancy. Ladies may look to advantageous lighting as a means of enhancing beauty. Keep in mind that a strong light produces violent contrast of shadow and illumination, which is trying to a lady's face. A soft light and soft shadow give gentle rounding and good definition—concealing rather than emphasizing a possible blemish. In sitting at a window the light should pass a little in front of the face and at an angle which would admit of its reaching the shaded side. To sit with a strong light coming squarely in front where both cheeks are equally illuminated is to be positively avoided. It makes the face a blank by robbing it of all shadows. The little depressions and articulations of surface anatomy are lost, while a little turning of the head either way immediately restores the shadows by the changed direction of light, and the lost dimples, the contour of cupid's bow to the lips, and little "well holes" at corners of the mouth, are all back again. A judicious blending of light with shadow quickly makes or unmakes beauty in a woman's face. With an understanding of these light and shadow values it is as easy for ladies to look their best as to fail in it. The demonstration of this knowledge is easily acquired. The reward comes quickly and satisfactorily. In choosing a pew in church it should be remembered that a window just opposite and near the sitting is objectionable to good light effect—a seat or two back is more desirable, as it avoids the abrupt shadow. Artificial

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light, gas or electric, should be shaded with porcelain or ground glass. The most favorable direction for the light to fall upon the person is at the angle of forty-five degrees from above and ten to twenty degrees back of the falling light. Do not try to abolish shadows, but to soften them. Find the soft effects, and wear them if you would be lovely. An instance in illustration of the quality of light and the direction in which it may fall upon a face may be understood by the following description. A lady noted for her beauty—a brunette, with soft dark eyes and clear, fine complexion—spent an evening in my house, to meet some friends whom I had prepared to see a beautiful woman. It so happened that unconsciously she took a seat directly under the chandelier where the force of light struck forehead, nose and cheeks, illuminating them abnormally. The shadows, by violent contrast, quite concealed her eyes, leaving only black patches of shade, with no illumination to give detail or expression. The nose threw a heavy shadow across the upper lip, the mouth, and upon the chin; the lower portion of the cheeks, the throat and neck were in deep shadow. The lines at the corners of the mouth were elongated and inky in shadow. There was a really handsome woman looking absolutely hideous. Every smile she gave was a grimace, a smooth skin was roughened, her hair was like wires. I was greatly embarrassed at the injustice done her by an unscrupulous light; hurriedly called my wife aside; directed her attention to the unfortunate situation, and got her assistance in remedying without exposing it. When on some pretence she got the lady to rise I hastily removed her chair to a position in a good light where justice was done her and my friends were enabled to see her to advantage.

THE NATURAL VIEW ANGLE.

BY C. WELBORNE PIPER.

It has been frequently insisted upon that as a photograph is a drawing in plain perspective, it cannot appear to be true unless viewed from the proper station point; but it is obviously not easy to insure the observer taking up the right position when he is left to himself. All that the producer of the photograph can do is to so arrange matters as to render it likely that the spectator will instinctively adopt a right position, and this is best insured by limiting the view angle. The spectator selects his own point of view mainly as a matter of personal convenience. If not attracted to a near point by the desire to examine fine detail, or repelled to a distant point by an impressionistic effect that will not bear close inspection, he takes up a position that enables him to see the whole picture easily and with the least amount of exertion. If too near he cannot take in the whole without turning his head, which involves the losing sight of some parts of the picture, and also renders the examination irksome. Leaving out the question of defective eyesight, which cannot be allowed for, and also the consideration of abnormally small or large pictures, we may assume that the choice of position is governed mainly by the desire to secure a comfortable view angle, and the natural view angle of vision is a practical matter worth careful consideration, as it obviously must govern the relation between focal length and size of picture.

The natural view angle may be defined as the widest angle of acute vision that can be included with ease, and without any movement of the head. Most people seem to greatly exaggerate this angle when they write about it, but it cannot, as a matter of fact, much exceed 20°. The matter is not so simple as is generally supposed, for in the act of vision we employ two station points in each eye, and the angles of view vary according as we use one eye or two, or as we employ fixed or mobile vision. Mobile binocular vision is the rule, and theories founded on the exceptional case of monocular fixed vision are altogether deceptive; but, to prove this, it is necessary to take a general view of the various phases of vision.

All the angles I am about to give have

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been arrived at as the result of careful personal measurement; they will no doubt differ with individuals, but the variations are not likely to be very great.

If we examine an object with one eye alone under the conditions of fixed vision (the eye not being allowed to rotate in its socket), an image is formed on the retina in eccentric spherical perspective, the station point being situated in or near the crystalline lens, which is toward the front of the eye and away from the centre of the spherical retinal surface. The extreme view angles of this image are about 160° for the horizontal and 140° for the vertical angle; but, practically, a single line is not distinguishable outside an angle of 60°. Acute vision is possible only at one small central spot of the retina, which spot subtends an angle of acute vision of only about 2½°; therefore, to clearly distinguish two objects separated by a greater angle than 2½°, it is necessary to rotate the eye and examine each object in turn—that is, to employ mobile vision. It is a feature of the retina that the impression of one object can be instantaneously blotted out and replaced by another; hence the fact that the two images are really formed in succession on the same spot is hardly appreciated by the brain, which receives the two impressions almost at the same moment, and considers them as one. The eye does not, however, rotate about the nodal point of the lens, but about the centre of the eyeball, and the combined mental impression of the successive images is, therefore, that of a view in normal spherical perspective, taken from the centre of rotation as a station point, and viewed from that point. This station point being farther from the object than the station point for fixed vision, a narrower angle is included, and the image is smaller. The extreme angles included in mobile monocular vision are 100° horizontally and vertically. Acute vision is possible within these angles, but they can only be included as the result of a very painful effort, and an angle of 60° is uncomfortably large. Perfect ease is only secured within an angle of about 30°, which is considerably less than the maximum possible, but much larger than the angle of acute fixed vision.

Next we may study the case of binocular vision, excluding all questions of stereoscopic effect. The mentally combined image perceived as the result of employing both eyes on the one subject is practically a view taken from a station point between the eyes. If both eyes are fixed, the extreme horizontal angle of view is about 210°, the vertical angle being the same as with one eye. The angle of acute vision is, however, very little greater, if any, than that secured with one eye alone. If both eyes are allowed to rotate the station point is moved back, and smaller angles are included. The extreme horizontal angle is about 90°, which is a painful angle; 50° is a moderate but still an uncomfortable angle, and for perfect ease 20° may be considered to be the maximum. All these horizontal angles are less than with monocular vision, though the vertical angles are the same; but it may be noted that as we are generally less accustomed to a vertical rotation of the eye such movement can hardly be made without conscious effort, for which reason a horizontal oblong picture is more comfortably examined than a vertical one; and we may say that, in general, the natural horizontal view angle is greater than the vertical angle.

If we permitted movement of the head all these angles would, of course, be unlimited; but such movement is precisely what the spectator avoids in studying pictures; he likes to keep to the natural angle included by mobile binocular vision, and the smallness of this angle is the most noteworthy point to be observed in the measured results given above.

Suppose, now, we take a negative with a lens giving a focal distance equal to twice the length of the image; the angle of view is then 28°, which is about a maximum permissible natural angle. If the focal distance is about three times the length of the image the angle is just under 20°, which is perhaps the most desirable angle. It is evidently advisable to make the focal distance two and a half times the length of the image, and this means that a quarter-plate image should be formed by a 10-inch lens; or, if you use the usual 5-inch lens, that the result should be cut down so that its length may not exceed two inches. The latter proceeding would then necessitate the enlargement of the image so as to

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increase the focal distance to a convenient dimension for distinct vision. Here, again, there are several matters to be considered in deciding on a convenient distance. The minimum distance of distinct vision is generally taken to be about ten inches, though that is too short for some people and too long for others. Exceptional eyesight cannot be allowed for, so we may conclude that if a print is to be seen only in an album, a focal distance of from ten to fourteen inches is sufficient. If, however, the result is to be hung on a wall a much greater distance should be allowed, for the main thing to avoid is the inspection of the picture from too great a distance. The effect is not nearly so bad when the spectator is too near as it is when he is too far off, and for an exhibition picture you can hardly allow too great a focal distance. The painter often places his station point so far away that no spectator can very well get beyond it in an ordinary room, and, under such conditions, even a wide-angled view will look natural, as it can only be seen under wide-angled conditions. But the painter also has the advantage of not being bound to plane perspective; he usually employs what is best described as rectilinear spherical perspective, and has several other ways of eluding the pleasant effects of wide angles, which ways are not open to the photographer. If the latter enlarges a wide-angled view, and then hangs the result in a narrow passage, so that no one can see it from too far a point, he will make the best of an awkward business; but if the print is to be seen to the best advantage under all ordinary conditions, there is really no alternative to the employment of a narrow view angle. This course has the additional advantage that even if the spectator does get too far away from the picture, that fact is of much less consequence with a narrow-angled view than it is with a wide-angled one. Reduction of angle compensates to a considerable extent for too great a viewing distance, and a great deal can be accomplished by trimming the print. The principal point, however, to be borne in mind is the fact that, as a rule, the spectator will select a position from which the picture covers an angle at about 20°; and that it is therefore best to arrange matters so that your picture shall cover that angle as nearly as possible from its own proper station point. Further, you must see that that point is an accessible one for the spectator.—*Amateur Photographer* (London).

OUR PICTURES

SOME weeks ago a clever photographer said to us, goodwill beaming in his eyes: "I thoroughly enjoy the practical papers provided in the MAGAZINE month by month, and get many useful tips from them. As far as the reading matter is concerned, the MAGAZINE could hardly be improved. But I cannot understand the pictures. They are so far behind the best we are doing in American portraiture to-day." We publish his opinion as frankly as it was given, because it touches a matter of general interest —the influence of the point of view.

Different men are interested in different things—especially in so diversely interesting an art as photography. What interests one has no interest for another. A magazine must necessarily meet all interests which are grouped around its subject-matter or which touch the varied needs of its readers. The photographer whose opinion we have just quoted is chiefly interested in fine portraiture, an art in which he is unusually proficient. We may safely say that the pictures in our next issue, being portraits of children by photographers skilled in that difficult specialty, will interest him. Doubtless the pictures of this issue will hardly excite his interest at all.

But do they not justify their place in our pages?

Have they no lesson for the man engaged in serious photography? Let us see, running over them very briefly.

Mr. Ernest Gall, of Adelaide, South Australia, is one of the most wideawake photographers of the southern hemisphere. His work includes almost every branch of professional photography, from photographing babies in the studio or at home to the

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making of half-tone blocks to illustrate a commercial catalogue. As an interested reader of this MAGAZINE, Mr. Gall sends us a bundle of examples of his everyday work. The prints are not convention exhibits; simply ordinary prints from the day's work as it goes out of the studio. They show us the quality of the workman; they tell us what he is doing out there under the Southern Cross with his camera; they show us how he faces the difficulties of his everyday experience as a photographer, taking all the opportunities within his reach to make photography useful and profitable. Surely his work, if good, should be interesting to our readers as it was to us? How shall we share it with American photographers better than by using it for the illustration of our pages? To be sure, it may displace a portrait by this or that prominent American photographer. But year in and year out our readers get an ample supply of the best American work in our pages, at the conventions, in the annuals, and in other photographic journals. So we make room for Mr. Gall and his work and its lessons. "The reception of the Duke and Duchess of York" at the Adelaide Town Hall: here we have an event similiar to the visit of our President to an American city. Do we always get as satisfactory a record of our events as Mr. Gall managed to get of his event? A wide experience of our illustrated journalism tells us that Mr. Gall has succeeded cleverly indeed, and can give us pointers in work of this sort. He gives us a comprehensive view of the event. The street extends before us and we see the scene. We admire the technical excellence of the view and get satisfaction out of it. In the original 8 x 10 print every detail is clearly presented. Is there no lesson in such an example?

"A Group of Butchers' Retail Delivery Wagons" was made to display the delivery facilities of a local butcher. To get the line well displayed the photographer had to climb with his camera until he got on a level with the driver at the far end of the line. This brought the group well within his range, and the result proves the device to be one worth knowing and illustrating.

In his "Two Favorites" Mr. James H. McCorkle gives us a good example of the print that sells in the picture stores. People "fancy" these bits of life with a touch of humor in them, and photographers who can make such studies can usually sell them to advantage. Similarly Messrs. Whitney & Son contribute a capital story-telling picture in "A Difficult Passage." Their work is worth more than a glance. It is well conceived and well carried out. Brehmer Brothers, up in Rutland, Vermont, have striven for years to picture the quiet delights of summer-time in that haunt of summer travellers. In the bit of work we reproduce over their name the pleasures of summer-time in Vermont are well set forth. Such pictures find ready sale among lovers of country life, and are especially well adapted for guide-books and travel literature. "A Shepherd and His Flock," by Mr. A. Marshall, of Boston, is another charming interpretation of country life. The original print in sepia, measuring 12 by 16 inches, has desirable qualities which are lacking in the reproduction, but the engraving suffices to indicate desirable subjects and the way to handle them, points which the progressive photographer can fully appreciate.

The two portraits by Oscar Suck and F. Boissonas give us a glimpse of the work of two prominent Continental photographers, and, from that viewpoint alone, should have interest for our readers. Similarly, Mr. Aune's portrait of a child was one of the best examples of work sent by the photographers of the Pacific northwest to the National Convention, and is well worthy of a place in our collection. In all there are faults as well as beauties; faults which are obvious and need not be especially named; good points which will repay the practical student who will look into the collection. The reader who can "see nothing in them" is lacking in breadth, and should broaden his horizon for his own soul's good. Not all the gems of the conventions are precious stones. There is a goodly proportion of "paste jewels" among the best of them.

Waterproof ink can be made by dissolving shellac in a solution of borax and by adding to that some fine black pigment, such as gas black.

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PRACTICAL ADVERTISING.

The Kind That Brings Business.

BY CHARLES P. MARSHALL.

"THE proof of the pudding is in the eating." A better proverb was never penned; and, mark you, no other so appropriate to photography.

An appetizing odor may advertise the pudding as "delicious;" but unless it melts in your mouth you will never pass your plate for a second slice.

Likewise a handsome booklet may breathe of the beauties of your portrait work; may tempt the pictorial appetite of the reader to the sitting point; but unless the finished pictures prove what your alluring arguments and handsome half-tone engravings said, you will never secure that customer for another order. He will tell his friends, and they will tell their friends, that you are clever at getting up a booklet, but your portraits are just common stuff.

Don't doubt but what they recognized lots of likeness in the work; but that subtle something—the art part—the qualities that challenge one to look again and again; the qualities that attract the stranger are, alas, lacking, simply because you have neglected to school yourself or be schooled in the sound principles of pictorial photography and composition.

Not only wealthy city people care for the highest grade of pictorial photography, but people of ordinary taste and means crave more than mere likeness in their portraits, and are willing to pay extra prices for extra qualities.

There is no use in arguing against the necessity of a sound knowledge of pictorial photography and composition. The public is fast becoming educated to appreciation of pictorial qualities through the widespread reproductions of fine pictures of old and modern masters. You will find them in school-rooms in the form of the penny pictures; and in a year's time the scholars turn up their juvenile noses at common prints in newspapers and other sources, and point with pleasure to the "real pictures" they have in school.

Then look at the array of art studies, especially select portraitures, to be found in almost every magazine; and in millions of homes these true pictures (true, because the composition is good and they possess pictorial qualities) are moulding and educating the taste of the great middle class, the thinking and doing class, the backbone-of-the-country class.

Again, in thousands of shops, stores, and factories hang beautiful calendars embellished with charming portraiture, landscape, and genre; they, too, are moulding and educating the tastes of millions of working people.

What does it all mean?

Just this; that when they come to you for a portrait *they are* not satisfied with pretty cards and fetching backgrounds. To be sure, there are only a few who can describe the qualities in a picture which they crave and are willing to pay for; but *they know* the genuine, pictorial portrait from the ordinary pretty likeness, however attractive the latter may appear with its imported cards and tonal effects. I say, they know the difference in pictures as well as they can differentiate *good* music from tinkling tunes, jigs, two-steps, and trash.

If you still doubt the pictorial trend of the times; doubt the demand for good composition; doubt the profits that come to the makers of good compositions, then open your eyes to the fine pictorial effects and compositions that appear in the applied as well as in the *fine arts*, such as pottery, jewelry, architecture, fabrics, wall-paper, books, and music.

You would not sit in your easy chair, after working all day, and enjoy the exquisite pattern of your wall-paper if the company that made it had not paid from $100 to $150 per week to its head designer. Neither would that company prosper if its patterns were not up to the art mark and people clamored for their exclusive styles, good in composition and design. People are willing and *do* pay more for such wall-papers than for other designs equally as expensive to producer, but lacking the exclusive touch, good com-

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position, and design. Set this down: that makers of fine wall-paper do not make their money by simply using costly machinery, choice colors, etc. The brains of their designer, who can produce good compositions, are responsible for "great sales."

The beautiful ring on your wife's hand would never have pleased her or won reputation and cash for its maker had it been other than an exclusive design (good composition). She might have selected one that had just as much gold in it, of a common-place pattern that took just as long to execute, but the exclusive style (good composition) appealed to her, and she willingly paid several dollars more for it. Set this down: *that* jeweller knew his business, and long ago gave up making common stuff. Now he lives in a better house; wears better clothes; has more time for reflection and reading. Life has become rosier for him simply because he has courage and sense to fit himself to make good compositions.

The makers of special furniture have the same history; so have the manufacturers of fine fabrics; so have the designers of handsome houses; and so have the brightest musicians, who long ago left off writing "pretty things" and have produced worthy compositions. You have not forgotten the record of New York's famous bandmaster. He performed his work well, and pleased thousands with his exquisite translations of other men's music. But not till he himself had thought out and given to the appreciative American people those grand, inspiring, patriotic, unmatchable strains of "Stars and Stripes" and "Hands Across the Sea" did he find fame and fortune! Set this down: that John Philip Sousa was not satisfied with copying and interpreting other men's brains, but went to work and studied and produced good compositions. They had pictorial qualities, too; for they brought vividly to the mind all the glorious feelings of Old Glory—martial music—resplendent uniforms; the painful tramp of the old Continentals—the final tramp of the Boys in Blue, and the patrolling picket under the quiet stars, in his sombre khaki. "*All's well,*" murmurs the American whenever he hears these masterly marches. And all's well with John Philip Sousa when his royalties roll in each month. He made $10,000 alone on "Stars and Stripes." Think you *the pictorial* is not worth learning. Think you a knowledge of *good composition* is not worth gaining?

Now, do not think I am harsh in urging you to lay aside your booklet ideas for a while and take up the serious study of Composition and Pictorial Photography. During the last year I have made a close study of the methods and pictures of American photographers. There is an almost unlimited amount of earnestness among them. But they have been following too closely the banner of excellency (?) that heads the cavalcade of manufacturers of plates, papers, lenses, backgrounds, and chemicals. Just a moment, please. I am not maligning the manufacturers in the least. For without their aid and enterprise in the past, photography would never have reached its technical perfection. Also the better knowledge a photographer has of pictorial photography and composition the better use he can make of all these excellent materials, and the more he will need of them.

Keep your finger on the pictorial pulse of the times if you wish to succeed. There is a whisper running along the line; pretty soon it will become a louder hum; then still louder—and throughout the photographic ranks will be heard in no uncertain voice: "Give us art;" "Teach us how to put pictorial quality into our pictures;" "Show us how to make a good composition!"

In anticipation of many inquiries, "Why should a studio keep on with newspaper ads and not booklets?" I will say, the arguments used in newspaper ads are bright, chatty, newsy talks from day to day or week to week, which are good for any studio to use. It shows they are alive and pushing for business; shows they have interest enough in their own town and people to keep them posted in their line. But with booklets every reader scans the handsomely printed pages, and gets the impression that the grade of work you are describing in such courteous and convincing sentences is something quite superior and distinguished. The illustrations suggest that the reader may look for portraiture full of pictorial qualities; portrait-

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ure whose composition is excellent. Then when the believing public visits your studio and discovers that your pictures are the same nice, prettily-mounted kind that are made all over the country, they will smile and say they "will think it over" when you venture to suggest a sitting. Perhaps you are still waiting for the appointment; but they are still "thinking it over," and have decided, and advised their friends that "you have splendid skill in arranging a beautiful booklet, but in your portraiture you lack originality and individuality."

"Where DO they have their portraits made?" you wonder.

I'll tell you where. They go to some amateur who has had an art training (and they are springing up in many a town all over the country), or they are going to the next town, where they know they can get from an art educated professional photographer just such portraits as they desire, and will willingly pay him four times the price of the pretty-tonal-effect kind.

It were better not to have issued such a booklet until you have trained yourself in pictorial photography and composition, for it will act as a boomerang.

I do not dispute but that there are some studios whose portraiture warrants the use of booklets. They are few, however; and the great majority of studios need not lose heart or courage—just keep right on with your newspaper ads and devote a reasonable amount of time to the pleasurable and profitable study of practical photography and composition. Then use your booklets, nicely illustrated, and lay a sound foundation for a fine patronage in the future.

TONING BROMIDE PRINTS.

IN the latter-day use of bromide paper for small or large pictures there is a general desire to get away from the natural black color given by normal development. This tendency to color is especially seen in the production of enlargements, a brown or sepia bromide enlargement finished by skilful work with sepia inks being usually attractive and salable. Mr. Harold Baker, a professional of long experience, deals interestingly with the subject in the current issue of the *Practical Photographer*. We republish his paper for the benefit of our readers who may be looking for a holiday specialty.

There are many ways of toning bromide prints, but the most satisfactory seems to be the method of "cooking" them in a mixture of alum and hypo. Uranium produces many beautiful colors, but the permanence of the result is (to put it mildly) doubtful. As the image will resume its ordinary color if the washing is prolonged beyond a few minutes, the color of the toned image cannot be expected to remain for very long if exposed to the damp air of our extremely variable climate. It may be argued that any image held in soluble gelatine is liable to change if damp is allowed to attack it; so that any ordinary bromide print would be apt to fade if exposed to damp. My own experience does not bear this out, as I have a bromide enlargement that was unwittingly hung on a newly-plastered wall, and after a few weeks it was discovered that part of the print had become "mouldy." The first feeling was that the photograph (a vignetted portrait) was ruined, but it was taken from the frame and kept in a dry room for a week. At the end of that time the remains of the mould were brushed off, and no sign of any mischief remains. It is eight or nine years since this incident happened, but the print is as good as the day it was made.

Other methods of toning by bleaching with mercury and other chemicals do not yield satisfactory results, as it seems almost impossible to get prints free from stain. The Platinotype Co.'s intensifier will produce good results, but the cost of the solution is prohibitive.

On the whole, the cooking method seems the easiest and cheapest, and the results *ought* to be as permanent as an ordinary bromide print. Some few precautions are necessary. The print should be a *little* darker than is desired when finished. The solution should be made up carefully according to the instructions. Ten ounces

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of hypo should be dissolved in seventy ounces of water and two ounces of potash alum added. A white precipitate will be formed, which should not be filtered out. The print to be toned may be placed in this solution as soon as it is fixed, or it may be fixed in the toning solution itself, *provided that it is cold.* It may then be placed on a water bath and the temperature raised until it is as hot as the hand can bear without discomfort. There is no advantage in having a higher temperature, as it does not seem to shorten the operation of toning in the least, and the risk of blistering of the print is incurred. The prints should be moved about occasionally during toning, or the change of color will be irregular; but if air-bells should produce untoned patches, constant movement of the print during prolonged toning will usually cause them to disappear. If the print has been placed in cold toning solution and the temperature gradually raised, the gelatine surface should feel like leather; and although it will bear a reasonable amount of handling, too rough treatment will cause the film to leave the paper in small chips, but without blistering or frilling. If the proportions of alum and hypo are not carefully weighed blistering and melting of the gelatine will occur, even sometimes if the print has been alumed and dried the day before toning, but if the solution is properly prepared the print may be toned as soon as it is fixed, if it is placed in the cold solution first. It is not easy to describe the exact kind of print that produces a good color. A flat weak print will never tone well except by some of the methods which increase the strength, such as uranium, mercury, and so on. A print for toning with alum and hypo must be strong rather than dark, but it must be a little darker than the finished print is intended to be, as the toning has a reducing effect, especially when the bath is freshly made. To obtain a good color and an effective result the image must go well into the gelatine film by good exposure, and be developed so that there shall be a good body of silver to form the image. The length of time required to change the color of the print is usually about thirty or forty minutes, the warmer colors needing the longer time.

Raising the temperature does not seem to quicken the process and may produce blisters, but sometimes a print will bear actual boiling without damage, but also without much change of color.

Prints on any kind of bromide paper are amenable to this method, but those on cream-colored paper appear the best when finished. Different kinds of paper give different colors—some give a warm black, others a reddish brown or sepia brown. If the prints are on pure white paper a little staining improves them, this may be done after washing and drying, by dipping them in a weak solution of tea or coffee, for a few minutes.

After toning, the prints are best placed in a plain alum solution, or left in the toning solution until it is cold, and then washed in the usual way, but before they are laid out to dry the surface must be well sponged to remove the white precipitate of the toning solution, which is extremely difficult to remove if it is allowed to remain on the print until it is dry.

Prints of broad character seem best suited for this process, such as enlargements made not quite sharp. A very pleasant effect may be produced, if a sharp, well-defined negative has to be enlarged, by using an old single landscape lens in the enlarging camera; but the ring containing the rotating stops should be unscrewed, thus using the lens at a much larger aperture than the maker ever intended. The effect produced is not fuzzy, yet not sharp, and lacks the sharp, knife-like edges of some enlargements. It is difficult to focus when all the stops are taken away, as it is not easy to tell when the image is sharp enough. This difficulty may be overcome by putting the ring carrying the stops on the lens again, and focusing with the largest stop, removing them before exposure.

A hot-water bath can be made with an enamelled iron dish, such as is sold for hot bath platinotype paper, or an enamelled iron dish may be bought at a cheap ironmonger's. This dish filled with water, may be supported on two bricks, one at each end and a gas-stove between them, under the centre of the dish; upon this is placed a granitine porcelain dish containing the cold toning solution. The prints are

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put into the solution, the gas-stove is lighted, and the temperature of the toning solution rises in about ten minutes to the proper point; the gas is then turned down low enough to keep the water bath warm, but not too hot. A small enamelled iron dish will keep the solution in a very large porcelain dish at a suitable warmth.

THE SULPHITES IN PHOTOGRAPHY.

THERE exists among photographers much misunderstanding concerning the properties and comparative advantages of the sulphites so largely used in development. In the October issue of *The Photo-Miniature*, dealing with "Photographic Chemicals," Mr. George E. Brown gives a summary of much value, which covers the practical uses of the sulphites. We extract a portion of his remarks for the benefit of our readers, but would advise them to obtain this number of *The Photo-Miniature* as one of the best dark-room helps available.

Sodium sulphite occurs in the crystallized and anhydrous form with the formulæ $Na_2SO_3, 7H_2O$ and Na_2SO_3, respectively. Sodium sulphite (crystals) should be neutral. This is invariably stated, but as invariably misunderstood. The term neutral, as herein used, refers to the chemical constitution of the salt, and not to its behavior with litmus paper. Mr. M. B. Punnett explains the detail as follows:

Sulphurous acid has two atoms of hydrogen which can be replaced by an equivalent base or metal.

If we replace one of these atoms of hydrogen by an equivalent amount of the metal sodium we have acid sodium sulphite.

Sulphurous acid.	Caustic soda.	Acid sodium sulphite.	Water.

$$\frac{H}{H}\Big\rangle SO_3 + NaOH = \frac{Na}{H}\Big\rangle SO_3 + H_2O$$

Acid sodium sulphite, or, as it is commonly called, sodium bisulphite, reacts acid with litmus paper, but is called acid because it has still left an atom of hydrogen which can be replaced.

If we replace both atoms of sulphurous acid with sodium, we have neutral sodium sulphite.

Sulphurous acid.	Caustic soda.	Neutral sodium sulphite.	Water.

$$\frac{H}{H}\Big\rangle SO_3 + 2NaOH = \frac{Na}{Na}\Big\rangle SO_3 + 2H_2O$$

Neutral sodium sulphite reacts alkaline to litmus paper, and is called neutral because the two replaceable atoms of hydrogen in the acid have been replaced by an equivalent amount of metal; that is, its affinity is neutralized or satisfied.

A similar relationship exists between carbonic acid and sodium bicarbonate and carbonate. In this case the bicarbonate (also called acid carbonate and baking soda) reacts alkaline, and the carbonate (also called neutral carbonate, sal soda, and washing soda) is strongly alkaline, as you all know. It is impossible to make neutral sodium sulphite acid, for if it is crystallized from a solution made strongly acid with sulphurous acid, the pure crystals react alkaline.

From these examples the inference must not be drawn that all chemically neutral salts react alkaline; on the contrary, there are some that test neutral and others that test acid.

Cryst. sulphite should be in clear, transparent crystals. A white powdery appearance denotes an impure salt, the result of bad manufacture or long keeping. The deposit is sulphate of soda, produced by air acting on the sulphite, and besides lowering the percentage of sulphurous acid has an injurious effect on developers. Very often the sulphate is only a thin crust on the surface, and by rinsing the crystals with a little water they become clear and bright. This should be done, the wet fragments being dried between blotting-paper and weighed out. When soda sulphite is placed in hot water for dissolving, it suddenly becomes opaque and similar in appearance to the impure salt; but this is merely due to the removal of the water of crystallization from the salt; the very best sulphite will behave in this way.

Stock solutions of all sulphite preparations should be kept in well-corked bottles, preferably filled right up to the mouth; the solid salts also require to be kept excluded

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from the air. Ancient authorities limit the solubility of soda sulphite of soda to 25 per cent., but a 50 per cent. solution can be made, and does not deposit crystals unless cooled much below 60° F.

Anhydrous soda sulphite keeps in good condition better than the crystalline salt when in the solid state; there is no difference between them in solution. One part of "anhydrous" equals two parts of "cryst." sulphite in preservative properties—*i. e.*, contains twice as much SO_2.

To test either salt for purity, add a little pure hydrochloric acid to a solution and then a few drops of barium chloride solution. A milkiness or precipitate denotes the existence of sulphate. The phenolphthalein tests show alkali.

Sodium acid sulphite ($NaHSO_3$) is formed by passing SO_2 into a strong sodium sulphite solution, which thereupon becomes strongly acid. It is largely used in the preparation of acid fixing baths, acting as a decolorizer, and in pyro solutions. Its composition is even more unstable than the neutral salt, and it should not be used in preparing single solution developers.

Potassium metabisulphite, otherwise pyrosulphite, is $K_2S_2O_5$, and contains 54 per cent. of SO_2. The crystals oxidize more slowly than sulphite, and the salt is in every way an excellent preservative of pyro. But it is acid, and when used to replace soda sulphite in a formula the alkali must be increased. The extra amount can be found thus: For every grain of potass. metabisulphite in a given liquid as used extra weight of alkalies as follows must be added: caustic potash, 5 grains; caustic soda, 0.36; potass. carbonate (dry), 0.62; sodium carbonate (dry), 0.48; sodium carbonate (cryst.), 0.96.

Acetonesulphite is a compound of anhydrous soda sulphite and acetone, and contains when pure 46 per cent. SO_2. It is very soluble—up to a 50 per cent. solution—and does not seem to oxidize so rapidly as sulphite. Quite recently introduced, many useful properties are claimed for this compound, both as a "preservative" for developing and fixing baths and as a restrainer in case of over-exposure. It comes in white crystals, and in solution has no odor, showing a faintly acid reaction.

In developing solutions 15 parts of acetonesulphite (Bayer) are said to replace 100 parts of sodium sulphite crystals, or 5 parts acetonesulphite (Bayer) will replace 3½ parts of potassium metabisulphite.

In fixing solutions 100 grains acetonesulphite (Bayer) added to each quart of hypo solution will keep it clear and colorless for weeks. When developers are used which color the fixing bath brown (as pyro), 150 grains of acetonesulphite should be used, as above.

As a restrainer acetonesulphite (Bayer) is used in the form of a concentrated stock solution (50 per cent.), added drop by drop to the developing solution as needed. Twenty-five to 30 drops added to 4 ounces of developer are sufficient for extreme over-exposure.

LANTERN SLIDES OF DIAGRAMS.

LANTERN slides from diagrams, maps, drawings, etc., are often required, and present many difficulties to those who are unaccustomed to prepare them. It sometimes seems quite impossible to get the lines dark enough without degrading the brilliancy of the whites. Of course, to the old collodion worker it is quite easy by means of redevelopment and intensification to produce a copy of a plan with sharp black lines (really black, not a dirty brown), with perfectly clear glass spaces between them. But as the collodion worker scarcely exists outside conservative process block, or professional lantern slide makers, we need not consider him. The everyday photographer is often at a loss when he is asked to make such slides, and probably they give him so much trouble that he becomes discouraged. To such a man process plates should be a "boon and a blessing," for they will help him do the work with ease. In the first place, his negatives should be made on process plates, the black lines should be clear glass and the white spaces nearly opaque. If the

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drawing to be copied is too weak to give an ideal negative, much can be done by intensification. The exposure for process plates must be full if good density is to be obtained; it is useless to give a short exposure and expect to get a vigorous result. In a good light, with *f*/32, the exposure will be from thirty seconds to a minute, the developer should be sparingly diluted with water, and should contain a fair proportion of bromide; but any developer which gives density will give good results. The image should begin to appear quickly, say within thirty seconds or less; development should be prolonged until the white parts of the drawing appear on the back of the plate, and if the dark lines are slightly veiled it does not matter. If on examination the dark lines appear much veiled in the negative, reduction with very weak ferricyanide reducer will clear them without apparently affecting the denser parts. If the plate has been over-exposed, or over-developed, the very fine lines will sometimes be blocked, and may even almost disappear. Here, again, very weak ferricyanide will effect a cure. When the drawing is soiled or creased it is almost hopeless to obtain a negative which will give a good slide on a lantern plate; but by using a process plate for making the slide excellent results can be secured from decidedly poor negatives. A hydroquinone developer should be used, and the slide may be slightly over-developed and cleared with very dilute ferricyanide and hypo. Most of the creases and dirt on the original drawing will be absent from a slide treated in this manner. In making the negative a full exposure must be given—under-exposure produces flat, weak negatives. Title slides are often useful for a lantern evening, and it is more restful to the eyes if they are made with the letters showing light on a black ground. Slides with black or colored letters on a clear glass ground are very trying to an audience if they come after a series of ordinary lantern slides. The former are easily prepared. The words should be written or printed in the deepest, dead black on a smooth white card; this card is then photographed on a process plate 3¼ x 3¼ inches, but the exposure must be under rather than over, as there must be no deposit of silver on the spaces representing the black letters. The slide should be developed carefully, so as to obtain the fullest density in the spaces round the letters, but the letters themselves must be represented by "bare glass." It is almost impossible to get sufficient density in the background by development alone, and development must be stopped as soon as the letters show any sign of veiling, as it is more essential to have clear letters than to have a dense background. The exposure is of the greatest importance, as it must be sufficient to give fair density in the background, yet not enough to veil the letters. A perfect slide is scarcely ever obtained by development, so recourse must be had to intensification. After thorough washing the slide must be bleached right through with mercury, and after another thorough washing blackened with dilute ammonia. The slide should not be dried in spirit, as this tends to damage the clearness of the letters. When dry the letters may be tinted various colors. One method of doing this is to superimpose slips of colored gelatine, but a better result is obtained by staining the film with the liquid colors sold for tinting photographs. Three colors will be sufficient—red, yellow, and blue. A special brush should be kept for each color, and the red brush should never be put into the blue bottle, and so on. The colors may be washed right over the letters, as the background should be so dense as to be disregarded. Two or more coats may be necessary, and if it is desired to produce more than three colors, several other shades can be obtained by washing a word over with blue first, allowing the color to be absorbed by the film, and become half-dry, when a wash of yellow over it will produce green; red on blue will produce violet, while red and yellow will give scarlet or orange. Different greens and violets can be produced by using the two colors in different proportions. The colors should never be mixed together before putting them on the slide, but each color should be washed on separately. If, for instance, green is desired, we may begin a faint wash of yellow, followed, after a few minutes, with a wash of blue; this may be rather too blue, and a second wash of yellow can be laid on, or *vice versa*. Mix-

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ing the colors before applying them produces muddy, dirty results. The letters on the slide will be reversed, but this can, of course, be put right when it is placed in the lantern. It is not necessary that the dark parts of the slide should be absolutely opaque. Those slides which show best on the screen, even when electric light is used for projection, are those in which the letters are quite clear, and the dark parts not dense enough to prevent showing where the color has been washed over the letters when held in the hand; such a slide will show the letters quite bright on a pure black ground. A pretty title can be made by putting black letters over a landscape. This is done by writing or printing the title on smooth pure white card, or Bristol board, using Stephens' ebony stain for ink. A negative the proper size is made from this on a process plate in the usual way, and a slide also on a process plate is made from it. A lantern slide of a suitable subject is then made, but it should be delicate in character, so that it may not obscure the black letters of the title; this slide is used as a cover-glass to the black letters. Another method, which scarcely comes within the scope of this article, is to make a bromide enlargement of a suitable subject, and fasten upon it rustic letters made of moss-grown twigs. These may be attached to the enlargements with needle-points, such as are used by cabinetmakers.—*Harold Baker, in Photographic Scraps.*

AMERICAN PORTRAIT PHOTOGRAPHY.*

BY AN ENGLISH CORRESPONDENT.

MUCH has been heard on both sides of the Atlantic, and more perhaps in England than in the States, of the "American School of Amateur Photography." Less has been said about the work of the professional, for, rather curiously, the man to whom advertisement would presumably be of commercial value has been the one to cultivate the silent side. . . . And yet in his own lines the American professional is as original and distinctive as his amateur neighbor.

It is easier to condemn than to commend professional photography, for not only is the average or mediocre work much oftener produced than is the strong, but the latter is much less likely to come before the notice of the photography loving public. In America, as a man's work advances his disinclination for publicity increases in an equal ratio. The only places in which the best work can be seen are the reception-rooms of the photographers or at the various professional conventions.

But in spite of its quietness the American school is very live and very full of hope for the future—and of fulfilment in the present. The "new" movement dates from some ten years back, a date when business was disorganized and very near panic, and when photography, as being a luxury, suffered severely. Many of the established men were forced out of business; others weathered the storm; but where young and obscure men were painfully trying to build a business in some small town they were hard hit. Fortunately for themselves these men were not of that class who drift downward into photography; they were rather poor men who had forced their way upward into it. The backbone of all life in America is in that large class which starts penniless and apparently handicapped at the foot of the ladder and climbs high by sheer hard work and close application. In no country is it easier to slip down into oblivion, and in no country are the rewards of effective work so numerous or so prompt.

This general trait holds good in photography. The names which are to-day known and honored in the profession are the names of men who began at the bottom—Anderson, Spellman, Falk, Strauss, Hollinger. Their task was not an easy one, for few of those who suffered a divine discontent had any neighbor with whom to share their efforts; and a number of

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men began independently, and with much groping, to seek the secret of better work. Before they had been working long they began to discover the work of each other at the conventions, and then the progress of the school became rapid. Gradually was evolved what is known as the new school.

The term "new" applied to a movement naturally suggests "old" for the parent stem; and such was the case here. But the term "old" must not by any means be read to mean effete. The old school includes the "straight," honest photography. Thoroughly grounded in technique, and with a wide knowledge of things pictorial, the leaders of the old school hold by beautifully finished work, careful lighting, and retouching with a tendency to flattery. The old school is the more numerous and the wealthier division of the American profession. The new school is the more interesting in that it is an aggregation of individualities formed by personal effort. Between the two there is no strong line of demarcation; they blend insensibly into each other. The new school clings to its technique and does not supplant good work with eccentricity; the old school is ever trying new things—new lightings, styles, poses. And many men are equally at home with either class of work.

The American photographer is probably in a better position, socially and financially, than his British cousin. At the top of the tree there is perhaps little to choose, though there is one strong difference: in England the professional leaders are usually "firms;" in America they are individuals. But in America there is much less of the "submerged tenth" wail; there are fewer incompetents at the very bottom of the ladder.

The question of prices is always interesting. Much has been heard of Mr. Hollinger's one guinea per print; but his case is almost unique, and the number of leading men who get an unusual price per print could probably be counted on the fingers of one hand. The truth is that the American, take him all round, gets a lower price than the same calibre of Englishmen. Many a country worker is doing good work—cabinets—at twelve shillings a dozen, where in England he would get fifteen shillings, or even twenty shillings. Material costs more, wages cost much more, and yet the photographer is prosperous. He has turned his attention to the vital question of attracting customers "early and often," and with a considerable degree of success. It is not on his prices, but in his turnover, that the American photographer scores.

It may sound a trite platitude, but the American photographer has made much money by taking pains and by attention to details. In regard to the former, it is noteworthy how many men there are who consistently turn out good work. They contrive to live up to their standard. In regard to details, the item of mounts is a good concrete case. A few wideawake men thought they saw hope of a special line, at an advanced price, in the use of broad mounts. They soon discovered that in the special line, but without the advanced price, they had discovered a business-bringer. In good class business the old cabinet mount, as a stock line, is a thing of the past. The American shares with the Englishman the fault, if fault it be, of usually taking a number of negatives of one sitter. But in his dozen delivered prints there will probably be three or four different poses, and each pose may be trimmed in two or three ways. Receiving a dozen prints, each with some distinctive feature, and all mounted on ample boards, seems like more for the money than the same number of prints, from one or two negatives only, mounted on the old-fashioned level-edge mounts—especially if the price is two guineas in either case. It is the old question of the pleased customer. This use of mounts has vitally affected the re-order question. In the old days the re-order was not due until the whole dozen of prints was disposed of. Now, the batch contains half a dozen possibilities. If several prefer the same print the re-order materializes promptly; more important, fond friends or relatives, undecided among variety, often prefer two or more separate poses. And this has proved a very real source of additional income among well-to-do patrons.

The photographer makes business by pushing business. The American printer is ahead of the English one—he does more consistently good work, though he has his

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share of spoilt prints. No leading man will use a cheap printing paper; he will have the best. As soon as he is strong enough he announces nothing commoner than platinum, with carbon prints as an alternative. He backs his good work by careful publicity. It may be newspaper advertising; more often it is high-class postal work to selected names. He may make his studio a meeting-place for ladies out shopping, or he may cultivate a wide circle of friends. However he does it, he backs up his good work by judicious proclamation thereof.

COMPOSITION IN GENRE PHOTOGRAPHY.

BY JOHN BARTLETT.

COMPOSITION is making one thing out of several things. A book or poem is made up of words arranged in a certain way, but it is not only the thought but also the arrangement which conveys the thought which gives value. We all know how difficult it is for some of the poets to convey their ideas without obscurity, because they have not the power to wield language to the purpose.

A picture, even though it has an idea, must have that idea expressed in terms of the right kind of lines, of the proper lights and shades; and these elements of composition, instead of being restrictions to freedom of thought, are the very channels into which the idea more readily flows. Just as rhyme and metre are to the poet, so composition is an aid to expression for the photographer.

In the exercise of our power of invention it seems almost as if the various components were obeying some Prospero-like power, as if their relations had some previous existence, and that we were merely bringing them together again. A sort of spontaneity is in all good compositions—that is, it never appears labored or strained.

Different parts of the most diverse things will fit in and adapt themselves to one another, and will become helps to pictorial effect instead of the hindrances or obstacles we first supposed them to be.

There is no design in a load of stones dumped out of a cart. It is only when the stones are set in appropriate form and manner in the beautiful edifice that we see the idea of the architect gradually unfold itself. In a picture, as in a building or any other structure, we must study the relation of parts and the general harmony of their association.

In natural landscape there is, to be sure, artistic grouping, but it is not a constant feature. All the incidentals do not compose harmoniously. Even in what might be called nature's genre we observe an arrangement of things in agreeable clusters, so that it would seem that grouping is a universal law.

We see this grouping wherever there is a crowd of busy or idle people, where sheep or cattle gather together in flocks and herds, in pasture, or by the water's edge. Even inanimate things, rocks and trees and clouds, seem to have at times a feeling for harmonious relations; otherwise we would never get any of the direct transcripts from nature by photography in which is manifest the esthetic law of unity in variety, the subordination of many to one. But there are so many chances in nature of encountering distracting elements.

In the genesis of a genre picture we have the elements more in a flux, and they may be better moulded to our peculiar ideas, better subjected to the laws of esthetic composition.

The principles of unity in variety and subordination may be more effectually secured by making our pictures consist of as few elements as possible compatible with clearness, observing simplicity and not trying to crowd into the scene a vast congregation of discordant things, each of which cries out for supremacy and so weakens the general effect.

We have frequently heard the criticism of a picture to this effect: "That space looks too empty," and the ever-receptive photographer looks round for a stop-gap to fill the hungry spot, drafting into service anything convenient, no matter how incongruous to the theme it may be.

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Now, perhaps that gap in the picture really added to its effect. Your figures should always have space enough to move around in comfortably, and sometimes a vacant space behind a figure gives it a marvellous effect of motion. It suggests that the figure has moved through that space.

The modern decorative style of painting which has been copied from the Japanese, of cutting off part of the picture by the edges of the frame, has been seized upon by the photographer in search of the bizarre. For some varieties of work it is allowable to suppose the figure has some interest outside the margins of the print or frame, but it is often only an evidence of affectation. It is well to be economical of space, and large areas of background settings to our figures are not desirable; but, on the other hand, when we cut out our prints so that the figures are too large for the space, the effect is very unpleasant. An erect figure especially, if the head is inclined, looks ridiculous in a border which cannot possibly allow of the head being raised without bumping against the top.

The mere huddling together of things, therefore, is not artistic composition. Each element introduced must play a part like a score in musical harmony.—*The Photo-Miniature.*

NEW BOOKS.

THE season of 1902–03 is apparently to be prolific in books made for the helping of photographers. This is a healthy sign, for the old adage that "knowledge is power" applies most forcibly in so progressive an art-science as photography. The successful photographer of to-day is, first of all, well read in the literature of his profession. From this reading he obtains that freshness of information and directness of adapting means to ends which is the continual inspiration of his progress. Books such as Mr. Ryder's *Voigtländer and I*, reviewed at length on another page, are of the highest value to progressive workers, being the record of a photographer's actual experiences in business life. Next come books giving technical information on definite branches of work, and last, but by no means least, come the year-books or annuals, wherein many workers summarize their experiences in pithy articles. We urge our readers to buy all the books dealing with photography, and to avail themselves to the utmost of whatever advantages can thus be gained. Not all photographic books are worthy either of publication or of the trouble involved in a careful reading. But it will often happen that a comparatively worthless book will contain, in a single paragraph, information worth all the cost of the volume. This can only be ascertained by risking the price of the book, and the risk is one which is well worth taking. Seldom, indeed, is a book found which is wholly unprofitable. Those briefly noticed here are all well worth their cost to any photographer, and can be obtained from the publisher of this MAGAZINE on receipt of the prices mentioned.

The Lens. A practical guide to the choice use and testing of photographic objectives. By Thomas Bolas and George E. Brown. $1.25, post free. The purpose of this handbook, which covers 176 pages, with a profusion of diagrams and illustrations, is to explain the properties of photographic lenses without the aid of confusing mathematical formula, and to give practical instruction in the selection and proper use of lenses for various purposes. The number of books devoted to the photographic lens has increased of late years, but a careful examination of this latest contribution convinces us that it deals more helpfully with its subject than any of the others. It is encyclopædic in character, and the descriptions are given in very plain language. We cannot recall a handbook on the lens which is so thoroughly illustrated. Photographers needing lens information will do well to obtain a copy of *The Lens*, wherein they will find definite answers to most of the questions one may ask about the everyday use of lenses. The book has a capital index and is well bound.

Finishing the Negative. A handbook of all the processes between fixing and

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printing, with a special chapter on films. Edited by George E. Brown. $1.25, post free. This is a very practical addition to the literature of photography, and covers a definite period in the history of the gelatine negative. In its 160 pages it practically tells the photographer everything he can want to know about those processes which are applied between the removal of the plate from hypo and its arrival in the printing frame. Chapter X., on retouching portrait negatives, with the following chapter on hand work on the back and front of the negative with pencils or chemicals, are worth many times the cost of the volume to those seeking instruction upon these difficult branches of photographic practice. Like the book on lenses, this handbook is encyclopædic in its fulness, and written in very simple language, with many illustrations in the text. It has a full index, and is bound in cloth.

Photographic Apparatus, its Making and Adapting. $1.00, post free. In this volume Mr. George E. Brown has gathered together a number of practical papers on the home manufacture of photographic apparatus. Although amateur and professional photographers in America are not so much given as their English brethren to attempting the manufacture of cameras and enlarging apparatus, etc., at home, this volume will be found exceedingly useful by those who are remote from the large cities and have to do the best they can with such materials as they have at hand or can readily devise. The book contains 128 pages and almost 200 diagrams or working sketches. It fills a very definite want in its field.

Photo-Lighting. A treatise on light and its effects under the skylight, including chapters on Skylight Construction, Window Lighting, and Dark-room Work. 90 pages, profusely illustrated. Cloth, $2.50. H. A. Hyatt, St. Louis. As Professor of Skylight Work in the Illinois College of Photography, Mr. Raymer has had some years of practical training for the writing of this book. It contains concise descriptions of all the various methods of lighting the subject employed in American studios, and is furnished with abundant illustrations of the various styles. We regret, however, that the author did not put his material into the hands of some one fitted to edit and prepare the book for publication. It is loosely constructed, and there are many repetitions. The practical value of its instruction will doubtless make amends for its deficiencies of style and other defects. The book is well printed, and its appearance, tasteful binding, etc., do credit to the publisher. The chapters on skylight construction and home portraiture are in themselves well worth the price of the volume.

The A B C of Photography. By Fayette J. Clute, 85 pages; 25 cents. The Camera Craft Publishing Co., San Francisco. For many years Mr. Clute has devoted his leisure to answering questions from the readers of photographic magazines. This good work has given him a practical understanding of the needs of the amateur or beginner in photography, and his little book—rightly named an *A B C*—is the outcome of his experience. It covers the whole field of photography as far as the amateur is concerned, and covers it thoroughly, simply, and helpfully. We recommend it with pleasure as a capital introduction to photography.

The Photo-Miniature. Messrs. Tennant and Ward, New York, send us an interesting booklet describing the forty-three numbers of *The Photo-Miniature* series of monographs on photography. With this series our readers are already acquainted. It is sufficient, therefore, to mention the publication of this descriptive list and again express our goodwill for the admirable series about which it gives information.

To prevent frilling, the plate or film should be immersed for one minute, if the temperature is 70° Fahr., or over, or for two minutes if it is 55° to 60° Fahr., in a bath made by taking Schering's photo-formalin, one ounce, water, nine ounces. This is sufficient for a dozen 4 x 5 plates. It may be poured off into a well-corked bottle and used repeatedly. After taking the plates out of this bath they should be washed in two changes of water, rocking the dish well, then drained, and developed as usual.

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WORKROOM NOTES.

To title negatives with dark letters on the prints, make a solution of iodine in a saturated or nearly saturated solution of potassium iodide and add a little glycerine to give the solution body. Write the letters upon the surface of the negative with this, using a quill pen. When the solution has acted right through the film, rinse and fix in hypo. This will dissolve the silver iodide formed and leave the letters in clear gelatine.

A backed plate goes a long way to overcome halation, but quick development is at least as important. Prolonged development will bring out halation even when the best backing has been used.

Platinotype Tins. All workers of platinotype know how very apt they are to tear the paper against the sharp, jagged edge which is left by the sharp cutter in the lid of the tin, as they are removing a piece of paper. To safeguard against this, run the handle of a knife or other blunt instrument around the outlet of the tin, turning the cut edge over slightly, leaving a smooth, rounded one.

Keeping Platinotype Paper Dry. The rubber band used to cover the junction of lid and box will sometimes get hard and lose its elasticity; in which case, try the effect of soaking it in fairly hot water for a few minutes. This may partly restore its elasticity by rendering it less hard, if the rubber is of good quality. If one band becomes loose, a second similar old band on top of the first one will often put matters right.

Carbon tissue that has been printed may be kept previous to development by washing out the bichromate salt with cold water and then drying the tissue on blotting paper; it will then be no longer as sensitive as before, and can be developed at any convenient time within a reasonable period.

Place buckled mounts face downward on a flat surface and wet the back of the mount evenly all over, being careful not to allow any moisture to get to the front. Cover with a sheet of blotting-paper, then with a board on which place a heavy weight. When dry the mount will be perfectly flat.

Photography has been put to many uses, but the latest and most original use is to ornament ladies' dresses. The first appearance of a photograph garment takes the shape of one of those dressy collars which are now so fashionable. The collar is a beautiful confection of black and aluminum braiding and raised white braid flowers, and has long pointed pieces of white silk on which are beautifully photographed clusters of small field flowers. The effect is dainty, and once the photographic idea is started it needs but little stretch of the imagination to picture entire dresses on which photographic groups of flowers or even views and scenes may be introduced. —*London Daily Graphic.*

SUCCESSFUL PHOTOGRAPHERS I HAVE MET.

BY H. FELL.

(Concluded from page 408.)

Another very important point in portraiture is expression. It is said that when you looked at one of Rembrandt's portraits it seemed as if the man were going to speak to you, and you went away wondering what it was he was going to say, and you would go back again to see if you could not find out.

There are some successful photographers in the United States who have discovered the importance of expression, and who are making pictures so that when you look at them you wonder what the subject is going to say, and you look at it again to see if you cannot find out.

I was in a gallery this last winter and was shown a set of twelve negatives. The subject was a local politician. He wore a long Prince Albert coat, a heavy watch chain, a felt hat, and a pair of light trousers, and had a cigar in his hand. The picture was a full-length portrait, and showed this man standing. In

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one negative he would have his hat on the back of his head, a cigar in his mouth. In another picture he would have a different expression, his hat pulled down over his head, his hands in his pockets. In another picture he was looking at his watch. In one picture he was laughing, in another he was sober. The twelve pictures gave twelve different expressions of the man's face and body. I will guarantee that if the pictures had been printed in a row with the head cut off in each print and displayed in any corner grocery in that man's district, every five-year-old child who had ever seen the man would recognize him in the prints. That is individuality of the body. The photographer should work for that just as much as for individuality of expression.

Remember that you are making pictures for people's friends, and people desire to remember their friends as they look in their best and most charming moments. To make these pictures you must become acquainted with your sitters. You must talk to them and strive to bring about their very best expression. You must make them feel perfectly at home. Work in every way to attain this end.

I called on the photographer I have just mentioned as having made this politician's pictures about four o'clock in the afternoon, and he was completely exhausted and tired out. I said to him: "How many people have you photographed to-day?" He said nine. All day long he had been working to become acquainted with these nine people, and had been using his entire nervous energy and personal magnetism to make them forget themselves. But every one of these portraits had expressions in the faces that their friends knew and recognized.

Remember, in portraiture we must make round, bold, and brilliant pictures with transparent shadows, and we must reproduce flesh and texture. When an artist paints a picture, if he paints a nine-inch head he paints it to be looked at ten or fifteen feet away, and he gives it a rough texture. The smaller the picture the finer the surface that he paints it on. I know a miniature painter in New York city who gets $800 for a miniature—a man whose work is renowned. When he paints a miniature he paints it on ivory as the smoothest surface he can get. And he paints the skin of the face as smooth and soft as the lady's face who is his sitter. He works up all the detail of the lace work. You can see the hair, the eyebrows, and the texture of the skin. All these points should be understood in portraiture. I believe that photographic conventions can spend their time more profitably in studying portraiture than in putting their entire time into pictures made entirely for pictorial effect. (Applause.)

EDITOR'S TABLE.

PHOTOGRAPHS WANTED.—We are asked to give place to the following item as interesting to photographers on the lookout for journals willing to pay for photographs:

Comfort wants photographs of interesting people, places, and things. They may be of historical houses, monuments, localities, graves, churches, trees, bridges, or anything else that has more than a local interest. We want photographs of things that are peculiar and which are not found elsewhere, from a double-headed calf to a chicken with four legs, or some person who has done something extraordinary. We especially want photographs of men or women who are one hundred years old or upward.

For such photographs *Comfort* will pay *one dollar* each, if acceptable. Each photo must be accompanied by a short description of the subject. Any size photograph will answer if it is very sharp and clear, but we prefer them not less than 2½ by 3½ inches.

Note: Inclose a stamped and addressed envelope with your matter. If not accepted it will be returned promptly. If it can be used you will receive check on the 15th of the month following its receipt.

Address, *Editor* COMFORT,
Augusta, Maine.

MR. WALTER L. GRAY, Memphis, Tenn., sends to our table a cleverly designed and artistically printed announcement of the second annual art exhibition at his studio. These exhibitions are an undoubted attraction, and have been enthusiastically appreciated wherever organized. We are glad to see that their numbers increase year by year.

LENSES STOLEN.—The following lenses were stolen from EDDOWES BROS.' Studio, 925 Broadway, New York, some weeks ago: One No. 7, Series 3, Ross-Goerz, No. 2641; one 8 x 10 Zeiss Unar, No. 40,912; one 21 x 25 Voigtländer Rapid Euryscope without flange or stops; number not known. Any information concerning the above will be appreciated.

Messrs. EDDOWES BROS. inform us that since making the above losses known they have received letters from other photographers which show that there have been upward of $2000 worth of lenses stolen from photographic galleries in and around New York within the last six weeks. This is remarkable, and should put our readers on their guard against what looks like an organized raid upon the fraternity.

THE RAY-FILTER COMPETITION, inaugurated by BURKE & JAMES, Chicago, some months ago, closed

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October 1st. The judges were Mr. F. Dundas Todd, editor of the *Photo-Beacon*, and Mr. Robert James Wallace, artist, spectrum analyst, and color specialist. The following awards are announced:

Class I.—Landscape with Cloud Effects.

First Prize. One 4 x 5 Century Grand Camera, awarded to M. W. Law, Los Angeles, Cal.

Second Prize. No 1 Ideal Magic Lantern, awarded to Robert D. Stevens, Hartford, Conn.

Third Prize. One 4 x 5 Wide Angle Lens and Cell, awarded to Clayton W. Mogg, 539 Normal Parkway, Chicago, Ill.

Fourth Prize. One 6 x 8 Globe Background, awarded to Adolph Ditner, Fort Dodge, Iowa.

Fifth Prize. Ideal Jr. Photo Optical Outfit, awarded to Gus Horlin, 5127 Wentworth Ave., Chicago, Ill.

Sixth to tenth, each $1.50 worth of photographic goods, awarded to John von Bermith, Alamosa, Col.; S. W. Martin, 232 Laval Ave., Montreal, Province of Quebec; Z. M. Barnes, Little Falls, Minn.; W. C. Webster, Jaquin, N. Y.; William C. Meyer, Ardsley-on-Hudson, N. Y.

Class II.—Flowers, Duplicate Prints.

First Prize. One 4 x 5 Ideal Sr. Camera, awarded to George C. McLean, Carpenteria, Cal.

Second Prize. Ideal Photo Optical Outfit, awarded to Charles S. Springman, 165 Eliot St., Detroit, Mich.

Third Prize. Ingento Ruby Lamp, awarded to Robert E. Weeks, 545 Lunt Ave., Rogers Park, Ill.

Fourth to eighth, each $1.50 worth of photographic goods, awarded to C. H. Gardner, U. S. Marine Hospital, Port Townsend, Wash.; Francisco Azoarate, Cuernavaca, Mexico; John H. Wilson, Sykesville, Md.; E. F. Findlay, 1206 Ash St., Macon, Ga.

THE VOIGTLANDER & SON OPTICAL CO., New York, send us a copy of their new catalogue of Collinear Lenses, revised to date, and showing several new introductions. Among these we note a new lens for process work and color reproduction, named the "Apochromat." This lens has been warmly received by European specialists, and by its special correction for color should prove of great value in its field. The *Collinear*, Series II., is also listed with a special "focusing jacket," for use in cameras having focal plane shutters, and permitting the focusing of objects at various distances from the camera by a convenient device.

We are informed that from now on the well-known Euryscope Lenses will be furnished by the VOIGTLANDER & SON OPTICAL CO., and the new catalogue lists No. III. of the Euryscope series, which has for years been the most popular of portrait lenses. The catalogue is handsomely illustrated, and can be had on application.

WE are glad to see in the *Aristo Eagle*, No. 21, a strong indorsement of Mr. W. I. SCANDLIN, manager of the Business Development Bureau, 345 Sixth Ave., Brooklyn, N. Y. In the *Eagle* referred to Mr. SCANDLIN submits two attractive advertisements which are offered to all photographers to whom they may be useful. These advertisements are good examples of Mr. SCANDLIN'S skill in this specialty, and photographers who want help for the advertisement or development of their business (and what photographer does not need this help) should enlist Mr. SCANDLIN'S services at the earliest possible moment.

Since writing the above we have seen some capital little folders recently prepared by Mr. SCANDLIN for a few prominent studios. These little folders contain a few pages of interesting reading matter, and in some cases are charmingly illustrated with half-tone pictures. Sent out in dainty covers and attractively gotten up in arrangement and press-work, they are bound to be business bringers. We feel sure that if our readers could grasp the quality of the service offered by Mr. SCANDLIN he would be very much overworked. His bureau exists for the advancement of the photographer's interests as a business man. It deserves and should have the practical co-operation of every photographer who seeks success.

Camera Notes, vol. vi., No. 2. The first number of this sumptuous quarterly issued by the Camera Club of New York, under the editorial direction of Mr. JUAN C. ABEL, reached our table just too late for notice in our last number. In succeeding Mr. ALFRED STIEGLITZ, Mr. ABEL undertook a task of unusual difficulty, and, in common with all who had watched the growth of the magazine under Mr. STIEGLITZ, we were curious to see how the new editor would acquit himself. It is much to Mr. ABEL'S credit that the magazine so well sustains its reputation. We cannot say that his first number surpasses or falls behind the standard set by his predecessor. We can say, however, that it promises to show improvement in future issues, and has a touch of liveliness lacking in the *Camera Notes* of past days. The few indications of freakishness in the make-up of this initial issue under the new management, due doubtless to the desire to present "something different," will, we hope, disappear as the new editor gets his work better under control. Now that *Camera Notes* is offered to all who desire to subscribe for it, we trust that many professionals will take advantage of its pages, and especially of its illustrations, to inform themselves of the "advanced tendencies" which the magazine is supposed to represent in a particular way $3.00 per year. *Camera Notes*, 3 West 25th St, New York.

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THE Convention reports given in recent numbers of this MAGAZINE have attracted considerable attention by their thoroughness and interest. We are in receipt of many letters from pleased subscribers who declare that our reports of the Buffalo and Boston Conventions gave them as much satisfaction as if they had been present at the Conventions in person. In the last number of that enterprising and valuable journal, the *Aristo Eagle*, published by the AMERICAN ARISTO CO., Jamestown, N. Y., Mr. PATTISON says that our report of the Buffalo event was in every way the best published. The labor involved in presenting these reports was considerable, and we are pleased to see the work appreciated.

THE MARSHALL AD. CO., of Cazenovia, N. Y. announces that it will discontinue the writing of booklets for photographers for a year, and will devote its energies to teaching Pictorial Photography and Composition. There is no doubt whatever but that photographers need this teaching as much as they need booklets, and we hope the services of the MARSHALL AD. CO. will be largely employed. Mr. CHARLES P. MARSHALL, from whom this teaching must come, is well fitted by his experience and training to give practical help in the work, and his enthusiasm in the adventure is plainly evident in the article from his pen given on another page of this issue.

MR. W. P. BUCHANAN, 1226 Arch St., Philadelphia, known everywhere as the *Luxo* flashlight man, is making a special drive on the new "Background Etchings," recently introduced. Every professional should see the last issue of the *Photo Ticker*, sent free on request by Mr. BUCHANAN, which tells all about the new grounds, with some charming illustrations.

THE study of reproductions of paintings is universally recognized as a helpful means of improving one's work in photography. On this account we are glad to advise our readers that Mr. HERBERT RANDALL, New Haven, Conn., has issued a booklet describing "The Randall Reproductions of the Jarves Collection of Italian Paintings Owned by the School of Arts, Yale University." This collection includes 115 examples, exhibiting the progress of Italian art during six centuries, 1000–1600 A. D., and the reproductions should be of the greatest value to art students and picture lovers.

CRAMER'S *Double Coated Plates* are now made in all speeds and brands, absolutely non-halation for interior work, and of great value for outdoor and commercial photography. These plates require considerably longer development, fixing and washing, for obvious reasons, but this extra trouble is well repaid in the results.

THE Photographic Section of the American Institute, full of lusty life and enterprise despite its years, announces a course of lectures abounding in interest for the new season just opening. A postal card addressed to the Secretary, Dr. JOHN W. BARTLETT, 149 West 94th St., New York, will secure a copy of the prospectus.

The first preliminary meeting to organize a photographic society in America was convened in the lecture-room of the American Institute, February 26, 1859. The second meeting was held one month later, March 26, 1859, and constitution and laws adopted, the organization of the society completed by the choice of permanent officers, JOHN W. DRAPER, M.D., LL.D., being made the first President, the present President being Mr. OSCAR G. MASON.

CHARLES COOPER & CO., 194 Worth St., New York, sends us a copy of their new *Chemical List*, giving the prices current, changes, etc., of all the chemical agents used in photography. This handy list, published monthly for free distribution, offers much useful and timely information, and should be seen regularly by the professional photographer.

MR. R. CHILD BAYLEY, editor of *Photography*, London, returned to England a few days ago after a brief visit to this country. During his stay Mr. BAYLEY made a somewhat hurried survey of the photographic activities of our larger cities, including a visit to the Rochester factories.

INCORPORATION is the order of the day. Among recent events we notice that the COSSITT PHOTOGRAPHIC PAPER CO., of Chicago, has been formed, with a capital of $10,000, for the purpose of manufacturing photographic supplies. The JOHN BRADLEY CO., of Matawan, N. J., is another incorporated company with the same object, organized with a capital of $75,000. The LONDON PHOTO-SUPPLY CO., of Cincinnati, is a third newly organized company. Its capital is given as $200,000.

THE well-known firm of SESSIONS & MARTIN, of Toledo, Ohio, has been dissolved by mutual consent. Mr. M. A. MARTIN will continue the business at the old location, 227 Superior St.

THE closing date for receiving competing exhibits in the BAUSCH & LOMB photographic competition has been extended to October 1, 1903. This extension is in response to the urgent request of intending competitors who could not prepare their exhibits in the time previously arranged.

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PORTRAIT OF A BOY

Otto Boyé, San Francisco, Cal.

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WILSON'S PHOTOGRAPHIC MAGAZINE.

EDITED BY EDWARD L. WILSON.

VOL. XXXIX. DECEMBER, 1902. No. 552.

THE END OF 1902—AND AFTER.

For almost forty years we have devoted this first page of our December issue to a friendly chat with our readers. The good old custom must not be allowed to lapse. Wherefore, health and all the season's greetings to our friends and co-workers, here and everywhere over the wide world! May all our years be as full of good as this one so near its end! We would like this to be taken as a personal word, between ourselves, so that the subscriber in Wanganui, New Zealand, and the missionary brother in Formosa, as well as the "constant reader" down in Blairstown, New Jersey, and every other may know that we thought of *him* in this greeting.

The year 1902 has been one of the most prosperous years the American photographer has known. Not every circus fulfils the expectations called forth by the gaudy posters on the barn door. But 1902 will be long remembered as a year which more than fulfilled all the predictions made for it. Speaking broadly, the photographer has enjoyed his work day by day; has found his patrons ready to appreciate his best efforts and pay for them; has found conditions favorable to the improvement of his business; has added to his bank balance, and has bettered his standing in his community. Let us be thankful for our good fortune.

In the work of the Magazine during 1902 it has been our continual endeavor to help our readers to take advantage of their wonderful opportunities. To the best of our knowledge this Magazine has given its subscribers more useful information and more practical instruction than any other journal published for photographers. A glance over the contents and index published with this number will show the variety of the subjects dealt with, their direct relation to the daily work of the photographer, and their value to him as a business man. The labor and expense involved in the work has taxed our resources severely. We have liberally shared our profits with our readers. Now, that the year's work is ended, we make bold to ask our readers to sum up the results of their investment with us and give us a prompt verdict.

If the Magazine has brought you pleasure and profit, see that the renewal of your subscription is sent promptly. If the Magazine has deserved your good-will and support, give us the good-will in the shape of a new subscription. A very little effort will accomplish this good work and strengthen our hands for 1903.

Yours, with all good wishes,

Edward L. Wilson.

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THE ELECTRIC LIGHT IN THE STUDIO.

SOME years ago the use of the electric light for studio portraiture was actively discussed, and, in response to vigorous advertising on the part of interested patentees and manufacturers, many photographers in the Eastern States installed the light for use in their studios. Among those who made practical use of the electric light in this way Mr. George G. Rockwood may be mentioned. Mr. Rockwood threw his Broadway studio open for night portraiture and produced some remarkably good work with his special equipment. This was simply an arrangement of three electric arc lamps side by side, suspended from the ceiling of his studio, about eight feet from the floor and enclosed in a frame covered with tracing cloth or tissue to diffuse the light. The time of exposure was from three to five seconds with the usual portrait lens. About the same time Clinedinst, of Washington, D. C., produced some excellent specimens of portraiture with a single lamp and a reflector system of his own devising. The question of efficient equipment was then taken up by Messrs. E. & H. T. Anthony & Co., and their system was successfully demonstrated at their Broadway store. For some reason or other the various systems did not meet the requirements of every-day work, or, perhaps, there was not sufficient excuse foi artificial light in this country, where we have such an abundance of sunlight, or it may have been that the invention was before its time. Whatever the reason the use of electric light for studio purposes was gradually abandoned by those who had attempted it, and to-day we could not name half a dozen American studios where artificial light of any sort is used with any regularity.

In Europe, however, the matter was not allowed to drop. One system after another appeared, each perfecting some practical defect in its predecessor. The Adamson system was perhaps the most successful, consisting of a circle of incandescent lamps arranged in an umbrella form, swinging to any angle or position at the will of the operator. A modification of this system was successfully introduced by Mr. B. J. Falk in his new gallery at the Waldorf-Astoria, and is, we believe, still in use. We have seen portraits made with this light which were quite undistinguishable from portraits made by daylight.

The latest and, apparently, most practical system of electric lighting for studio use is the system invented by Morgan Bros., of Aberdeen, Scotland. This system is fully explained, with numerous examples of portraiture produced by the light, in a brochure recently received from Hurman, Ltd., of Newcastle-on-Tyne, England, who are special agents for the sale of this system. We extract a few pages from this brochure* for the benefit of our readers:

"The first and most important feature in the Morgan system is the large area of illumination which is made available to the artist, ranging from 80 to 120 square feet —or even more—of equally illuminated surface. Compare this with the largest of the parabolic and other forms of illumination, and it will be seen that the covering capacity is more than equal to four parabols of six feet diameter.

"The next important feature in the system is the actinic quality of the light, which is rich in violet rays, making well exposed negatives possible with an exposure of less than half a second (lens at *f*/3), and groups perfectly covered in six seconds (lens at *f*/7).

"The general appearance of the Morgan lamp is that of an ordinary daylight window, divided by the usual astragals, and glazed. There is no appearance of mechanism, and any person entering the studio while the light was in operation would be led to believe that he had entered a room lighted by soft diffused daylight. The size and angle of the apparent window is, moreover, such as one is accustomed to see in all daylight studios; and in the treatment of sitters for different effects of lighting the usual blinds and screens used in daylight work are employed.

"Another important feature is the sim-

* *Artificial Light for Portrait Photography*, together with a Study, *How to Make Dry Plates Yield the Best Results for Portraiture.*

Twenty-two pages, with many illustrations. Post free 25 cents (stamps), from Hurman, Ltd., Newcastle-on-Tyne, England. We advise those interested to get this interesting pamphlet, as it is worth many times its cost to the student of portraiture.—ED. W. P. M.

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plicity of manipulation. A switch is moved, and the room is instantly flooded with soft white light. Should more be required a lever is pushed forward, if less, it is pulled backward. There is no noise, and the actinic value is registered by a graduated scale showing the quantity of electric current passing through the carbons in ampères. The economy of current—an important factor—has been carefully and fully considered, and waste has been reduced to the lowest point.

"The light is obtained from powerful arcs fed automatically and, where the current used is continuous, noiselessly. All the light, both direct and reflected, is utilized, but the direct light is so broken up by reflectors and diffusers that all the light, both direct and reflected, is thrown into the studio and on to the subject in a broad diffused mass the full size of the window aperture.

"So actinic is the quality from the amount of violet rays contained in it that rapid exposures can be made without the eyes being strained. Indeed, in few cases among the hundreds of sittings taken by the inventor has any comment been made or any notice taken of the light by either adults or children. All seem to take it for granted that they are being taken under usual conditions. The economy of current is such that the whole operation ought to be conducted in full light. This, moreover, lends a dignity and an absence of excitement and show that cannot fail to be in the highest degree beneficial alike to artist and model.

"Another feature of the system which is of the utmost importance to photographers is the absolute certainty and equality of exposures. Given a light of sufficient covering power for all purposes, and possessing all the qualities of good daylight, this is no mean advantage. There are many excellent operators, artistic, quick to realize the good points of their subject, with a thorough mastery of light and shade, and yet whose work invariably suffers more or less either from under- or over-exposure. Nor is this—in view of the extremely fluctuating character of daylight—to be wondered at. Every hour of the day makes a difference, and in some days the light will vary greatly every few minutes. This is a matter every operator knows (mostly to his cost) so well that no more need be said on that subject save this, that were it not for carefully managed development, how many *perfect* negatives would most of our good operators turn out per hundred taken? And how much money is spent or wasted per annum in every *first-class* establishment for plates to cover possible failure—or at least detriment—in this particular instance alone?

"In the Morgan system the quantity of light is registered by meter, having a dial that may have the exposure marked in plain figures, with lens at full aperture, so that the only calculation the operator has to make is the relative speed of the plate used and the lens aperture. Thus all qualities of lighting can be employed with absolute certainty of perfect negative results, low-toned, rembrandt, or full for children.

"In short, by the use of the Morgan system the festivity of the winter season can be turned to advantage, to the profit of the photographer and to the pleasure of his *clientele;* dark days or unmanageable lights will have no terror for him, and 'appointments' need never be put off on that account.

"As has already been stated, the system is the outcome of many years of investigation, involving expensive experiments, and has not been put upon the market until carefully tested for all conditions and purposes required by the photographic operator."

Another paper on this subject is given elsewhere in this issue.

Mr. George B. Sperry, of Toledo, O., has taken the handsome residence formerly occupied by the West End Club, at 1607 Adams ave., that city, and transformed it into a first-class studio for professional portraiture. The new establishment has every equipment for work of the best sort in all classes, but special provision has been made for the portraiture of children, in which Mr. Sperry is a specialist. We wish our friend many years of happiness and prosperity in his new venture.

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CHILD PORTRAITURE.

BY JOHN A. TENNANT.

TIME was, not so very long ago, when a paper on child portraiture had to begin with a few remarks urging the business advantages accruing from this special branch of professional photography. This is no longer necessary. The photographer of to-day fully understands the business value of children as subjects for his skill. Whether he always works along the lines of least resistance in following up his advantages is not so certain. With abundant opportunities for covering a wide field of achievement, I must confess that the most desirable portraits of children I see are made by amateurs, or by professional workers who do not "belong" to the fraternity, or "old line" professional photographers.

Until within the past few years—practically until the coming of the rapid dry-plate and quick-working lens—child portraiture remained completely within the recognized sphere of professional photography. That the professional failed to take advantage of his golden opportunity is abundantly recorded in the family photograph album, now so carefully stored away among the "hidden treasures" of every home. In the course of time, modern photography and the amateur came to the rescue, awakening the professional to a keen appreciation of things before undreamt of in his photographic philosophy. Since which awakening we have had pictures of children such as painters and poets alike failed to give us, full of the roguish grace and abandon of childhood in all its innumerable moods, replete with the charm and illusion of life in its happiest phase.

The great lesson which the professional worker has to learn from the amateur is that children should be pictured as children, and not as little folk masquerading in all the seriousness of grown-ups. Those who will compare the portraits of children in this issue with those of the early sixties will appreciate the point. And yet the professional worker of 1865 had the experience of a quarter of a century in photography at his elbow. Oh! the wasted years. What joy the world has lost because this elementary lesson was completely overlooked!

In taking up the photographing of children—whether as a home hobby or as a business specialty—our little subjects themselves must have careful consideration before actual camera work can be attempted with any reasonable hope of success. You cannot take children as part of the day's work. First and last we must abandon the matter-of-fact point of view which we have acquired as one of the penalties of age, and cultivate the habit of looking at things as children look at them. While we are with them the things which interest, or surprise, or please them must awaken at least a semblance of the same emotions in ourselves, and the wisdom of our years should be restricted to the direction of the mental and physical activities of our subjects toward the end we have in view. There is joy in all this if we go about it in the right spirit, but we must beware of too much "make believe" or "bluff" in our fraternity with children. They have a wonderful understanding of fellowship, and their absolute simplicity possesses deeper subtlety than we can always recognize. Then there are two or three essentials which must be covered. We must have a big love for childhood and all things pertaining thereto—especially a familiar knowledge of its habits and desires. Next we must remember that children are abnormally sensitive to the influence of environment or locality. And we must learn to possess our souls in patience, without which, indeed, it were folly to approach the work we have in hand. Apart from these things we need an abundance of light, a rapid lens, quick plates, and a reasonable knowledge of photographic manipulation, for often our work must be done quickly and skilfully, and in strange corners as well as under conditions not always to our liking.

The necessity of a love for children in all who have to work with them is well understood, but it is less generally applied (or shall I say more clumsily applied?) in photography than one would suppose. The tactless, matter-of-fact way in which chil-

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dren are handled in many studios, for instance, is the easiest road to failure, and its result is seen in the average professional portrait of a child. It is hardly too much to say that unless one has a natural and strong liking for children one should refrain from any attempt to make pictures of them by photography. Fortunately this love for children is the most natural thing in the world.

Once gain the confidence of children, and we may do with them, or get them to do, whatever we may desire. But the confidence must come first. As a general thing, it is freely given to all who show a spirit of kindliness and sincere affection—to which children are peculiarly responsive. This should not be forgotten when we are asked to photograph children with whom we have had no previous acquaintance. In such cases let the camera be put aside and a little time given to "making friends." Many very interesting children are exceedingly shy at the first meeting, but if the camerist is of the right sort their reserve melts like snow before an April sun, and they open out into the most willing and delightful of subjects.

It has been well said that children are born with a sixth sense, fully developed, which very promptly tells them whether the man with the camera 'fits" or not. On this intuitive perception they build their intercourse with the stranger, showing him reserve, shyness, interest, or opposition, according to their keen appreciation of the inwardness of men and things. Those who seek to make pictures of children, therefore, must cultivate a love for them and seek by constant observation to become familiar with their ways and whims, how to approach them, and by what wiles to win and hold their interest and good-will.

In keeping with all this, wherever we find a photographer more than usually successful with children, such as Core, Rockwood, Spaight, Byrne, and R. W. Robinson, we find men who possess the happy faculty of quickly winning the affection of children, and who have acquired the habit of quietly "sizing up" their little subjects, so that the first few minutes of the sitting (the time of most importance in professional work) shall make for success when the studio is reached.

Because of this all-important kindliness, women are peculiarly successful as photographers of children, being rich in that love for and knowledge of childhood which lead direct to the hearts of children. Of the ways by which well-known women photographers, such as Mrs. Käsebier, Miss Watson, the Misses Selby, and many others secure their charming pictures of children, little, unfortunately, can be said. A woman's way hath ever been past finding out, and beyond analysis when she, herself, graciously explains it! That it consists of a magic winningness, a blending of simple affection and womanly tact, conveys the substance of the method but hardly helps us over the difficulties. When a mere man, naturally clumsy and awkward in such affairs, turns himself "with malice aforethought" to so delicate a task, we may perhaps learn something by observing his methods.

There are few influences to which children are more sensitive than to the influence of locality or environment. This is a detail which intimately concerns photographing children, but it has never received the consideration its importance deserves. Let us think it over. Children are interesting wherever we find them, but nowhere so interesting as they are at home. Home is the natural playground of the child—the one place with whose nooks and corners he is quite familiar; the only place where he is free to be himself, with all his faults and graces. At home the inordinate curiosity about everything in sight, characteristic of the child in health, has already been satisfied when we come to deal with him, and in his every-day environment there is no room for that reserve, timidity or shyness which influences him so strongly amid new or unfamiliar surroundings. At the studio the strangeness of the place and of the things about him awakens these undesirable moods, making success difficult to attain under conditions otherwise favorable. Herein the reader will perceive that, for our purpose, the photographer's studio, so far from being desirable, is oftentimes a huge mistake, and that the amateur has in this detail a big advantage over the professional worker. Thus for pictures of children as we enjoy them in daily life, it may fairly be said that the golden oppor-

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tunities fall to the amateur rather than to the professional. As a matter of course, where the studio is equipped to simulate the environment of the home, and in those rare instances where the photographer has mastered the gentle art of making friends of his little visitors, these objections do not apply. Nay, more; where these conditions are fulfilled the photographer, favored by his better facilities from the technical standpoint, can more easily produce pleasing pictures than the skilled amateur hampered by lack of these aids.

With very young children difficulty will be experienced in getting their attention directed to any one spot for the moment needed for exposure. The best course to follow in such cases is to get the focus, put in the plate ready for exposure, and then, in absolute quietness, gently tap the floor. This will generally attract the attention of the child, without alarming it or causing movement, and the opportunity for exposure is gained. With older children, whose attention wanders from one thing to another without resting on any one thing long enough for our purpose, the undemonstrative recital of a childish tale will often secure the degree of repose necessary. The vivacious child, of course, can be managed by being "let into the game" and impressed with the feeling that the success of the affair rests upon him. Or we may busy our subjects with some simple occupation, picture-book, or toy, and at the desired moment get their attention for the exposure. Mr. Nast, after long experience with children under the skylight, advises the use of the singing voice as an excellent way of gaining the interest of dull or indifferent children. By this he means the photographer to sing the necessary directions instead of speaking them. This may arouse apprehensions as to the photographer's sanity in the minds of older people present; but we are told the children enjoy the method, and the sparkle and brightness of animation are what we seek. Sometimes young children will persist in making "funny mouths," especially when the little teeth are coming. This can be overcome in part by touching the tongue with a small pinch of salt, which causes the child to close its mouth for a moment, during which the exposure should be made. There is a common desire among mothers for a picture of the baby smiling. Do not indulge it without an attempt at a second picture without the smile. A smile is pleasing at a first glance, but one wearies of it in a picture where it cannot change. Babies have as many moods as older folk, and are interesting in every mood, but the smiling baby does not wear well. Get the child interested, listening, looking for something or busy with its toes, and you will be just as gratefully remembered as if you had caught the smile.

As far as posing is concerned, the less said the better. Children from one to eight years are graceful in every move—that is, in free and spontaneous movement. From eight to fourteen years there is a little awkwardness, and simple poses will be most successful. With girls the three-quarter or full-length figure may be attempted; with boys the full figure should generally be avoided. But there are exceptions always. For my part I prefer Mr. Hollinger's method of letting the children loose in the studio, keeping them interested, and using a plate at every opportunity. This "wastes" plates, but insures variety of pose and expression, absolute spontaneity, and now and again a picture which could not be obtained by a hundred deliberate poses. In his studio Mr. Hollinger has a movable platform—which moves easily and noiselessly—and many of his most delightful pictures of children have been secured by its aid between "rides" and "talks."

All this, of course, has been said before. But I am convinced that the photographer needs this sort of wisdom (if wisdom it be) more than information about "eight stool groupers," humming-birds, and similar aids to success with which the old-time articles on photographing children too often began and ended.

Lime Fog. That deposit of lime salts which so often forms on negatives which are washed in hard water is best removed, according to Dr. Hauberisser, by weak hydrochloric or nitric acid. The strength should not be over one part in two hundred of water.

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ON RAISING PRICES.

BY T. E. MOORE.

THE question of prices is always with us; and it is very vital to our well-being. Few things are easier than to cut a price in half; few things appear to be more difficult than to add a dollar to the price of a dozen prints. And yet, if a photographer progresses in experience and in work nothing is more reasonable than that increase of price should come. In every profession men have to begin at the bottom, and gradually force their way forward to a competency, and photography is no exception.

Many people are much worried by the fact that there is no "flat rate" in photography. If there is one standard price, $3 per dozen for cabinets may be named. This seems to be a price satisfactory to many hundreds of photographers in country places, and aspired to by hundreds more; but from it prices range downward to the cheapest of tintypes, and upward to prices at mention of which we every-day photographers gasp. This wild variety in price does not imply, as so many seem to think, that photography is in a disorganized condition; but rather that in it everyone finds his level, and gets a price according to his work. I have talked with a good many photographers at the Convention, and find that a good proportion even of those who have always remained in the one location are getting better prices than when they first started. At sometime or other in their career they have faced the question.

How has this increase to be attempted? First and all the time, it is no use raising prices until the work warrants it. The number of men who are bluffing the people and getting good prices for poor work is much smaller than is sometimes supposed. And if a new man tries it he must expect to come to grief. We will suppose that the work warrants the increased price; the higher price may be immediately fixed; or it may be gradually led up to. In the majority of cases the latter course will prove the best. To raise prices at once, say from $3 to $4, may be a good advertisement, and occasionally may pay. We have often read of—though not so often met—the man who fought an epidemic of cut rates by raising his prices, by which he scooped the cream of the trade. A move to a new studio may occasionally be an opportunity for an alteration; but to old customers it will seem like a severance, and if the other man—that terrible other man—is at all alert, he will see to it that he gets a finger in your pie.

Let us consider a moment the gradual raising of prices, and I may say at once that perhaps the reason I recommend this method is because I have tried it myself. We are doing good work at $3, and think we ought to get $4. Suppose we keep to the $3 work, but introduce a new line at the higher figure. And here is a tip for those who think they are doing their *best* work at the old price. (It is a bad policy to do any but good work at *any* price, however low.) A considerable difference can be made to selling value by merely giving careful attention to variety in the appearance of prints. I was mounting cabinets on plain, old-fashioned bevel-edged mounts, and I introduced four or five different mounts, which necessitated variety in trimming, into a single dozen of pictures. At once the *average* price of my prints went up from $3 to $3.40. That is, nearly half the work I was doing was the $4 work. This was not all added profits, for the new mounts cost more than the old, but it was getting there, and I was well pleased. When I had run this for six months I quit quoting $3 as my regular rate, and first offered the $4 work, and then the cheaper if folks required it. So by gradually introducing something new in this way I worked to better prices, by a better grade of work, without ever altering my old original price. Plainly mounted aristo prints, matt surfaced, cost $4, and when I introduced platinotypes I got $6; or $8 when they were specially mounted. Prices must vary much in different locations. I reckon that I am as well off with my platinotypes as if I got $10 for them in some city where rents and taxes are away up.

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Once a year I revert to tintypes; for a couple of days before and after the Fourth of July I take quite a sum of money from tintypes. For the rest of the year, without counting enlargements, my prices *average* just about $4. Taking cabinet work alone, they are all around $5; but a few years ago I introduced midgets at a lower rate, and these pay well.

I believe that fair prices can be obtained for work in most places. It is merely a question of giving the customer good work and giving a tempting variety. There must always be those who cannot afford more than a very small price; but where the added value of higher-priced work is plainly visible a number of customers will always be found to go for it.

THE COMMERCIAL PHOTOGRAPHER—IN LONDON.

A (More or Less) True Story.

He was an American newspaper man and a great hustler.

"Say, Ward," he burst in, "I want a photographer; a real bang-up fellow, that can do the work. I'm off to interview Burpease, and I want some O. K. pictures of his office."

I told him where to find one of the best interior photographers in London, and I gratuitously added a little advice: "Whatever you do, mind you get Scottie himself; don't let him work off one of his pups on you, or you'll get left."

Next day he was at me again.

"Say! that man of yours is just great. He has some daisy pictures; and say! your lords and dukes know how to run a house." He had been caught by the glamour of old banqueting halls, and galleries of tapestries, and mediæval armor, and priceless paintings.

I saw no more of him for a couple of days, and meantime the interview had become history. When he appeared there was an evident cloud over his enthusiasm.

Perhaps it was the weather—it was a little thick out-of-doors, with just enough tinge of genuine fog to tickle throats and irritate eyes; but I feared the worst.

"Say, Ward! that infernal photographer's no good."

I handed him a formidable Indian cigar and settled myself to the matter in hand.

"Did you get Scottie?" I queried.

"Scottie! No! I got the idiot he calls his right-hand man. Oh! you needn't grin. I saw his work all right, and he knows how to take a picture."

"So! What's the trouble?"

"Trouble! the man's a fool!"

Gradually, and with much blasphemy, I got the story. The newspaper man and the chief assistant had gone to the office of the great man, and the American had relieved the monotony of the walk—we walk much in London—by recounting tall stories of the doings of such of his acquaintances as were press photographers, and of the fabulous sums they netted.

The chief assistant said no word in reply, but opened his mouth in worshipful awe, and religiously believed every word. So they came to their destination.

Mr. Burpease was gazing from the window, over the fair vista of the Thames, as they entered. The newspaper man commenced gunning for facts and the photographer worked away at his apparatus. For five minutes the two Americans chatted, and then it dawned upon the newspaper man that the photographer was unhappy. "Say! anything wrong?" he demanded. "No," was the hesitating reply; "but if Mr. Burps would not mind moving a little—" "Why," cried the great man, "of course you can't take me right in front of the window. Where do you want me?"

"Well, sir! if you don't mind, Mr. Burps—" He got no further. The newspaper man saw the trouble; the result of cockney generations of lord-worship was frightened in the presence of a multi-millionaire.

"Why not let Mr. Burpease sit at his desk?" he demanded.

The photographer rubbed a crumpled handkerchief across his brow and assented. The photograph was taken, and the operator stood at attention.

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"How about another pose?" demanded the newspaper man; but the photographer remained mute. Mr. Burpease stepped in front of the door, and the photographer said, "Yes, sir! thank you, Mr. Burps," and commenced to focus.

So three negatives were taken, and the photographer retired. The newspaper man felt disgusted, and as much ashamed as his nature would allow (which wasn't much). Also, he felt very wroth. The financier considered the interview over, and returned to his work.

I took the newspaper man around to my special chophouse, where we sit in little pews and drink from tankards, and watch the sputtering grill. There the waiters are friendly and reserve special corners for me; such a place is soothing to the wounded spirit.

On the way we met Scottie, and learned that the negatives were developed, and that the results were "Oh! very good, I think," which somewhat cheered us.

Later, we together went round to see the prints. Mr. Burpease was there, all right, but as for the accessories!—a few white papers showed where the desk should be; and the only light thing about the door was a glint from the polished metal knob. The newspaper man sat on the table and swore, and the chief assistant explained. There was no hesitation now, albeit much of "sir" and "Mr.," for he felt at home—he was making excuses.

"Oh, yes! he might have used a flashlight."

"But why *didn't* you!" thundered the American.

"If only Mr. Burpease had stood by the fireplace!"

"Why didn't you put him there?" And so the explanations went on, while all the time the newspaper man pounded the table and yelled:

"Confound it, man! Can't you see? I don't want your infernal explanations; I want my *pictures*. Look at those *results!*"

The chief assistant temporized:

"Perhaps, sir, I can retouch 'em a bit. I can bring out the details quite a lot, I think. I didn't know it mattered about the details; and the light was very poor, sir."

I led the American newspaper man away, and he was subdued.

"Say, Ward," he murmured, "I can't size up you blasted English. Let's club together and import a photographer from God's country." W. E. W.

BUSINESS NOTES AND SUGGESTIONS.

How do You Deliver Your Work? It is an easy matter to please or displease a customer. And first impressions are always the most lasting.

When you have finished an order for a customer your first thought should be to deliver it for him in the way that shall most nearly bring it to his favorable consideration. Employ a neat wrapping-paper or enclosure; take as much pains in wrapping the package as a druggist would in wrapping a package of pills; make it neat; keep it clean; see that it leaves your shop and enters the customer's home as neatly as though a jeweller were delivering diamonds.

A little care along this line is of inestimable service in pleasing a customer and making him feel satisfied with your work. —*Western Editor.*

The right of privacy in the control of one's photograph has recently received attention because of the decision in the Rochester case, reported in our pages some months ago. The subject is now being earnestly considered in Germany, and the Reichstag will, at an early date, take up a bill which bears upon this right of privacy in photographs.

According to this measure photographs can be produced only with the consent of the person whose picture is taken. Such restriction, however, is not to be applied to photographs which show persons in landscapes, processions, and similar affairs. Only for official purposes, as, for example, for the identification of criminals, shall the reproduction of photographs be allowed without the consent of the person photographed.

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The demand for the adoption of such a radical bill as outlined above was brought about by the strange action of two Hamburg photographers when Bismarck died. They obtained access to the room of the dead statesman and took a flashlight photograph of the body. It is needless to say that the Bismarck family took energetic steps against the culprits. Suits were brought not only for trespass, but in a civil action an order was asked for the destruction of the objectionable plates. Five different decisions were rendered on the subject. All upheld the rights of the heirs.

The Reichsgericht, the supreme court of Germany, while not considering the "right of privacy" as the most important part of the Bismarck case, rendered a decision in favor of the heirs on the ground that the objectionable photograph had been obtained by trespass. This decision has been severely condemned by some of the foremost German jurists.

Professor Kohler, of the Berlin University, an eminent legal authority, says the decision is absurd. On the same ground, for example, the owner of a villa in Switzerland, from where one can see the Matterhorn, could obtain a judgment for trespass against any person who from his house, without his permission, had obtained a view of the mountains. Furthermore, he is opposed to the so-called "right of privacy," on the ground that a person's physiognomy is the gift of God, and does not belong to one's self. Anyone in the public eye should recognize the fact that the world feels the necessity of seeing portraits of public personages. Of course, the professor says this is meant with the reservation that the photograph is not of an insulting or libellous nature.

THE PROGRESS MEDAL OF THE ROYAL PHOTOGRAPHIC SOCIETY.

THE highest honor obtainable by workers in photography, at least as far as the English speaking photographic world is concerned, is the Progress Medal awarded by the Royal Photographic Society of Great Britain. As far as our knowledge goes, no attempt has yet been made to secure this much-coveted award for an American worker. The list of past recipients given below shows, however, that the award is made irrespective of nationality. The high standard of achievement reached during late years by Americans in pictorial and technical photography would seem to justify an effort to bring the Progress Medal to this country. The work done by Frederic Eugene Ives and Alfred Stieglitz in their different branches may be mentioned as eminently deserving of recognition in this way.

In the hope that the endeavor suggested may be made next October we republish from the *Photographic Journal* the regulations governing the award of the Progress Medal and a list of the recipients to date:

The following are the regulations concerning the award of the Progress Medal:

The Council shall consider annually the award of one silver Progress Medal. The Progress Medal may be awarded in recognition of any invention, research, or publication which, in the opinion of the Council, shall have resulted in any important advance in the scientific or artistic development of photography. The award shall be conducted in the following manner: (*a*) At their November meeting the Council shall receive the names of nominees, duly proposed and seconded, and the nominators shall hand in a written statement of the special work for consideration; (*b*) at their December meeting the Council shall discuss the work of the nominees as set forth in the proposals, and shall ballot out the names until only one remains; (*c*) at their January meeting the Council shall, without discussion, vote openly upon the question of the award. Absent members may vote in writing, but the medal shall not be awarded unless two-thirds or a larger proportion of the recorded votes are in favor of its bestowal. Recipients of the Progress Medal shall be asked to present their portraits to the Society's collection. These regulations, with the names of those

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who have received the medal and a statement of the reasons for the award, shall be published annually in the October number of the *Journal.*

The following have received the Progress Medal in the years and for the reasons stated:

1878. Captain W. de W. Abney. For his scientific work in the advance of photography.

1881. W. Willis. For the platinotype process.

1882. L. Warnerke. For general progress and his discoveries in photography—actinometry, sensitometry, instantaneous shutter, gelatine emulsions, etc.

1883. W. B. Woodbury. For the Stannotype process.

1884. Dr. J. M. Eder. For his work respecting gelatine chloride emulsions.

1890. Captain W. de W. Abney. For his continued work, experiments, and investigations in photography.

1891. Colonel J. Waterhouse. For his original and continuous researches in relation to orthochromatic photography; the successful elaboration of a process of photographic etching; and the direct production of reversed images by the use of thiocarbamides in the developer.

1895. Dr. P. H. Emerson. For his work in the advance of artistic photography.

1896. Thomas R. Dallmeyer. For the telephotographic lens.

1897. Professor Gabriel Lippmann. For his discovery of the process of producing photographs in natural colors by the interference method.

1898. Hurter and Driffield. For their work in the determination of the speed of plates.

1900. Louis Ducos du Hauron. For having initiated three-color heliochromy as a working process.

1901. Dr. R. L. Maddox. As the inventor of the gelatino-bromide of silver emulsion by dry-plate process.

1902. Joseph Wilson Swan. For his services to photography in connection with the carbon or pigment printing process and its applications.

THE PHOTOGRAPHIC USES OF HYDROFLUORIC ACID.

BY RICHARD THIRSK.

COMPARATIVELY few photographers keep a bottle of this acid handy on the dark-room shelf, and yet those who use it find it indispensable in many instances. Perhaps the fact that the acid must be kept in gutta-percha bottles prevents many workers from stocking it, and where one is close to a dealer it may be just as well to get the necessary few drops of it from him when wanted. The only drawback to this is that the acid has been found to vary considerably in quality and in strength, which may upset somewhat the following formulæ. This, however, need not seriously interfere with their practicability, since a little experience will soon prove whether or not the acid is diluted; and as the formulæ are given for the pure acid, no damage will result from the experiment.

Hydrofluoric acid is used for broken negatives, for stretching films, for cleaning spoiled plates or negatives, and for reversing films for carbon printing. For making a broken negative as good as new there is nothing to equal fluoric acid. When a negative of any value gets broken much trouble and worry will be avoided by floating off the film at once, and transferring it to a fresh glass support. By doing so all risk of breaking the film while printing is avoided, and the film, when dried on its new support, can be handled as freely as formerly. Fluoric acid removes the film rapidly and clearly, and, as its action is not so much on the film as on the glass surface, without harm or any perceptible difference to its printing quality.

After making extensive experiments and tests with it the following would seem to be the best proportion:

Fluoric Acid	3 drops.
Water	1 ounce.

Soak the broken negative in this until the film floats off, which should only take a few minutes. It is best to use sufficient

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of the solution to cover the negative entirely. As already stated, fluoric acid is sometimes sold diluted, and it is not uncommon to have to use ten to fifteen drops to the ounce of water, according to its strength.

If the negative has been varnished it will be necessary to remove the varnish in spirit before placing in the above; otherwise it may be flooded without any previous treatment.

Immediately the film is floated pour off the solution and rinse in a gentle stream of water for some minutes. While washing, the pieces of broken glass should be removed, taking care to handle the film as little as possible. Spread it out in the bath in order that every part may be thoroughly washed. The new glass support should be slipped underneath while the film is still in the bath full of water.

By the time this stage of the operation is reached the film will be limp and stretched somewhat. Spread it out carefully on the glass and remove it to a dry bath. Now flood it with wood alcohol, when it will begin to contract and harden. See that it is placed exactly in position on the glass, and as soon as it is contracted to its original size lift it out, and with the ball of the thumb gently remove any air bells that have a nasty habit of adhering between the film and the support. If the film has contracted too much it will stretch again if put into water. Place the negative up to dry, when it will be found to adhere closely to the glass, and work on it may be executed with safety.

Enlarging Negatives. Stretched Films. Some time ago this operation had a great vogue among hand-camera workers and those who used only small plates. The idea is to increase the size of the negative without the trouble of an enlarging apparatus. As it has to be done with great care it would be as well for the novice to experiment with negatives of little value before becoming too ambitious.

Negatives that are intended to be treated in this fashion should be developed very dense (the more they are to be stretched the denser they should be), as they reduce considerably in density after being stretched. They are treated in exactly he same way as the above, with the exception that the wood alcohol bath is not used, else they will contract again. As a matter of course a much larger support will be used than the one from which the film was floated, and it is better to have a little to spare all round. Great care must be taken not to tear the film while stretching it out; also to avoid any distortion. Sometimes distortions in the original negative may be helped in the enlargement. By this means it is possible to stretch a quarter-plate negative to nearly double, and so on through the various sizes. Should the film show a tendency to frill through over-stretching it must be carefully watched during drying (naturally) and coaxed to adhere to the support all round the sides.

Cleansing Spoiled Plates or Negatives. One often wishes to use the glass of a spoiled plate or negative. Sometimes the film adheres obstinately, and can only be stripped with difficulty. Place it in a diluted bath of fluoric acid and the difficulty will at once be overcome. The film will float, leaving the glass spotless and free from all grease.

Reversing Films for Carbon Printing. This is done in precisely the same manner as the treatment prescribed for broken negatives. The film must be reversed before it is removed from the washing to the wood alcohol bath. This is done by taking one end in both hands and slowly easing it over without removing the film from the water.

Notes. Keep the film under water as much as possible while working with it. This keeps it more pliable and renders it easier to manage while it is limp and slippery, and also lessens the risk of tearing it. For this reason it is as well to remove the old or broken support as soon as convenient and introduce the new one, giving the film an even surface to lie on. Always try to prevent the film curling up too much while washing, but in doing so do not handle it roughly.

As contraction begins immediately the film is placed in the wood alcohol bath, it is as well to have it stretched flat on the fresh support before using the bath, in order that the alcohol may be distributed evenly over the surface.

Drain all water off the film well before

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adding the alcohol, as too much water mixing with the alcohol causes a thin veil to form on drying. This disappears when the negative is rubbed with a piece of cotton-wool and varnished. Fluoric acid does not keep for any length of time after it has been used, though several films may be floated off in the same bath if done at once. But as the acid is very cheap it is not economy to be oversparing with it.

When the negative to be treated is varnished, be very careful that every speck of varnish is removed and the film *thoroughly* clean before using the acid. Carelessness in this respect will result in failure.

Negatives treated after the fashion above described have been printed from for some years, and are equally as good to-day as when they were first varnished.—*From the Photogram.*

AMERICAN PORTRAIT PHOTOGRAPHY.*

BY AN ENGLISH CORRESPONDENT.

THE logical outcome of a higher standard of work has been the specialist. A man develops along one special line, in some cases showing a preference for it, in other cases working it exclusively. Mr. Core, recently President of the Photographers' Association of America, is the children's photographer. He will not photograph a grown-up person, "unless accompanied by a child." Close to him in the same thoroughfare, Appleton specializes on "portraits of women only." Down in the heart of New York's business centre, near Wall Street's skyscrapers, Pirie MacDonald takes "portraits of men only." There is in New York a clientèle sufficiently discerning to recompense these specialists; there is an equally discerning class in London. Miniatures—not merely fragments cut from a cabinet print, but picture portraits arranged to beautifully decorate a small oval space—are common in the States, and among many workers none are better known than Dudley Hoyt or Benjamin. Mr. Benjamin's work is of the utmost delicacy; but ask many photographers, and they would reply, "Benjamin? Oh! he's the man that photographs old men." He appreciates the force and dignity of age, but he understands the delicate handling of youthful beauty. The specialist merges into the man with an individuality. The number of photographers whose work bears an unmistakable personal impress is very great. Take a hundred prints from a hundred rank-and-file photographers, either in England or America, and change the mounts, and it would be a hopeless task to endeavor to name their authors. A work by Barnett or Crooke, by Werner or Gill, would be recognizable; and there are many American workers whose photographs are equally distinctive. Strauss has introduced his now famous Lytrit pictures, but to those acquainted with his work his regular line is equally distinctive. The "big four" of the old line—Strauss, Stein, Steffins, and Falk—though producing work in accordance with the strictest canons of orthodox professional photography, are all of them men stronger than their apparatus, and able to stamp their identities across their work. In Los Angeles, Schumacher and Steckel create a succession of pictures of beautiful women; and Spellman, in Detroit, is exploiting the same field, but on lines peculiarly his own. The American photographer has discovered his mistake in regard to work of large size. Much of the best work is being done on cabinet—5 x 7—plates, and the prints much trimmed, sometimes to miniatures. Some of H. H. Pierce's daintiest prints are barely carte sizes.

The American photographer is a gregarious creature—it is one of his strong points. Far from harboring a feeling of professional jealousy, he welcomes his fellow-worker, whether from some other town or a local rival. Hollinger has made a hit with his high-priced work, and above and below him on Fifth Avenue imitators have arisen. There is a man who offers work at a quarter the price, and probably

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the average "man in the street" cannot distinguish between the respective samples. Mr. Hollinger smiles, and is quite frank about it. If someone else can do his work at a quarter the price his customers will find it out. He may reduce his prices, or start something else, or retire from the field. It is a free country, with free trade within its borders, and the best man may win. Mr. Hollinger's confidence is not in his position in Fifth Avenue or in his business connection. The one is already duplicated by a full score of photographers, the other is but of a few years' standing. His confidence is in the strength of his work.

American photography is optimistic; there are failures there, as elsewhere; failures through business inexperience, or through lack of a sufficient grasp of technique or art. But the failures are few compared with the successes, and as long as the fraternity remains as alert and as competent as it is at present, so long will the profession of photography in America be one of honor and success.

NEWS AND NOTES.

The Ives Parallax Stereogram, shown at the Royal Photographic Society's recent exhibition by F. E. Ives, of Philadelphia, and awarded the only medal given in the scientific division, has been presented to the Society by its exhibitor. It is described by T. Bolas, as follows, in the *Amateur Photographer*: "This adds one to the list of stereoscopic curiosities by which a stereoscopic effect can be realized without the use of any special instrument by the beholder, and in this respect it ranks near to the Clerk-Maxwell system of real-image stereoscopy as used by him in the class teaching of solid geometry. In the same class we have the crystal cube of Mr. Henry Swan, and the Claudet stereo-monoscope, which was exhibited at the Polytechnic Institute some forty years ago. The introduction of Mr. Ives' parallax stereogram may possibly revive the popularity of open-vision stereoscopic effects. In appearance Mr. Ives' stereogram somewhat resembles an ordinary transparency backed by ground-glass, the positive transparency consisting of narrow vertical stripes or bands about one-seventieth of an inch wide, and derived alternately from the two halves of a stereogram. If such a composite positive is viewed in the ordinary way both aspects of the original subject are seen as superimposed, and a confused or double image is the result. In order to so arrange matters that each eye sees its appropriate image, a suitable screen of opaque lines on glass is bound up with the composite positive, and about a twentieth of an inch in front, a position being found at which the opaque lines allow each eye to see its appropriate image, and true stereoscopic effect is thus produced. A slight shift in the angle at which the parallax stereogram is held to the visual axis causes each line of the screen to cover a line of the wrong transparency, and pseudoscopic effect results; still, with very careful adjustment, an intermediate position may be found in which each line of the screen covers half of two consecutive stripes. Under these circumstances, each eye will see both halves of the stereogram, and confusion of images will result. The parallax stereogram is in many ways a specially interesting photographic curiosity."

Mr. Juan C. Abel, editor of *Camera Notes*, *The Photo Critic*, etc., special contributor on photography to the *Delineator*, and Librarian of the Camera Club, New York, has been proposed for membership in the R. P. S., London.

Core's Magazine Holder. The profession will be interested to learn that Mr. E. B. Core, of New York, whose pictures of children have made him famous from Atlantic to Pacific, has placed on the market a studio magazine-holder of considerable practical utility. A magazine holding twelve plates which can be instantly changed without the photographer leaving his camera is something every professional worker has longed for since photography began. The holder invented by Mr. Core, and sold by George Murphy, 57 East Ninth Street, New York, has been in use for

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some time, and has given great satisfaction under these practical conditions. The capacities and operation of the holder are thus described by its inventor: The magazine holder carries twelve plates, and it is so arranged that by simply drawing the shifter (similar to drawing the slide) and shoving it back again, the exposed plate is drawn away and an unexposed plate comes into position for exposure, without the trouble of either reversing the holder or taking off one holder and putting up another. It is made strong and durable, and has been used in our own studio for twelve months with unqualified satisfaction.

It is reversible—a moment suffices to change from perpendicular to horizontal in the open light. Any number of metal kits may be had and kept filled for the day's use, when it can be re-charged in a minute. A wink or a move does not lose a satisfactory pose, as another plate is instantly ready to catch it.

An automatic indicator registers each plate as it is exposed, a duplicate register is visible from the back, that the operator may always know the number of the negative made. These numbers marked on the check identifies the sitting, after development, thus avoiding the trouble of writing numbers on the plate with a pencil in the dim light of the dark room.

To use the plate-holder to the very best advantage a few simple hints may not be out of place. To empty, we find it convenient to lean the holder against the wall on a shelf wide enough to allow the door to open downward, remove the spring followers, and by inclining the body of the holder forward allow the kits to fall forward into the hand. The same position is convenient for filling, and it is better to put in one at a time, being sure that the first plate rests properly on the brass guide rails. After a plate is exposed pull the shifter out as far as it will come, and then shove it in as far as it will go, when another plate is in position for exposure.

Grün's Fluid Lens. Anent this interesting development in photographic objectives, described in our pages recently, the editor of the *Photogram* says: We recently spent an enjoyable forenoon with Dr. E. F. Grün in his laboratory at Southwick, near Brighton, discussing the use of fluids for optical and other purposes. Dr. Grün showed us a number of negatives indicating that he was succeeding in greatly increasing the covering power of his fluid lens, and that at $f/2$—an aperture which he considers large enough for the many purposes of night photography in theatres and elsewhere—he can cover a quarter or half-plate at a moderate angle. Dr. Grün further showed us a tri-color print made by his friend, Captain Lascelles Davidson, in which ordinary bromide paper is used in making the three monochromes. The colors, though somewhat dull and degraded, seemed to hold out decided hopes for success, but the time for publishing any technical details of the method is not yet. Dr. Grün hoped to be able to exhibit Captain Davidson's alleged projection of cinematograph pictures in natural colors to us, but in this, unfortunately, he was disappointed. Dr. Grün's latest exploit is the taking of an Alhambra ballet in natural colors, the filters for the three-color sensations being formed by coloring the fluid in the lens. Of further practical details as to this application none are yet forthcoming.

THE London *Times* daily prints an extract from its columns of one hundred years ago, and some of its items are of considerable interest. In a recent note it refers to "Mr." Bartolozzi, quoting from its issue of November 4, 1802. It was, we believe, a photographer who defined Bartolozzi as "the man who invented red paint," and indeed the name is closely associated with a particular tint. The *Times*' extract goes to show that Bartolozzi was one of that numerous class—numerous in spite of what cynics say—who are recognized in their own lifetime; he had, too, the "artistic temperament," which too often is unaccompanied by business ability. Says the *Times* of Mr. Bartolozzi:

This celebrated engraver left our metropolis yesterday morning in order to proceed to Portugal. It is much to be regretted that an artist of such eminence, and whose talents have so long done honor to this country, should have been compelled, in

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the decline of his life, to have sought an asylum in any other—yet we have nothing with which to reproach ourselves on his account; the efforts of his genius have been rewarded with the liberality which uniformly distinguishes the English nation, and if imprudence has lavished what generosity has bestowed, it is a subject of regret that splendid talents should be unaccompanied by common prudence—the fact is, Mr. Bartolozzi has suffered himself to be too much imposed upon by his own countrymen, who have taken advantage of his easiness of temper and his carelessness with regard to his affairs. Thus, although he has acquired what might have been an independent fortune, he has neglected to preserve it, and to secure tranquillity and comfort to his latter days he has accepted the offer of the Government of Portugal, and has consented to pass the remainder of his days there, upon what in this country would be deemed a very moderate pension. We understand that a National Academy of Arts is to be established at Lisbon, of which Mr. Bartolozzi is to have the superintendence. He is to be attended by two pupils from this country. A handsome suite of apartments are to be assigned him, and everything else provided for him at Lisbon, independent of his salary, which is little more than £200 sterling a year. He purposes, before his final departure, to pass a few days at Bath. We cannot avoid observing that if the state of Mr. Bartolozzi's fortune is such as to require the aid of a patronizing government it would be a gratification to every Englishman that he should have been indebted for that assistance solely to the country of which he has so many years been the ornament.

If, however, his departure is a matter of choice, we sincerely wish he may meet with encouragement equal to what he has experienced from the British nation.

The path of the rays through a photographic objective can be readily demonstrated by means of an apparatus designed by Herr Schultz-Henke, and constructed by Leppin & Masche, of Berlin. The apparatus consists of a special optical lantern, by which any required pencils of light can be projected. The lens to be used in the demonstration is set up in a rectangular box with glass sides, this box being filled with smoke. This makes the path of the rays visible, and also allows color fringes to be seen. There are various adjustments on the outside of the smoke-box. Thus, in the sketch given, the smoke-box is shown as containing a Petzval portrait lens, the front combination, the diaphragm, and the back combination being supported separately on adjustable pillars. A black velvet background and an adjustable focusing screen can be used inside the smoke-box when required.

Green Tones on Bromide Paper. We are often asked for a method of obtaining green prints other than by printing in green carbon tissue. The following formula is given by Cadett & Neal for use with their transparency plates, and should work equally well with bromide papers. First tone to red in equal parts of

A.—	Uranium Nitrate	1 dr.
	Citric Acid	1 dr.
	Water	20 oz.
B.—	Ferricyanide of Potassium	1 dr.
	Water	20 oz.

When toned, wash until the high lights are clear, and then dip the print in

Perchloride of Iron (B. P.) solution	30 min.
Water	2 oz.

Enamelling Collodion Papers. The Paget Dry Plate Co. give the subjoined directions for enamelling collodion or self-toning papers, which may interest our readers:

If a highly glazed surface is desired, do not dry the prints after washing. Lay them, while wet, face downward on a piece of well-cleaned plate glass (which need not be French chalked or prepared in any way), roll the back firmly several times with a roller squeegee, and leave to dry; or they may be dried by heat in a few minutes. When thoroughly dry wet or well damp the back of the print in any way you please, and leave it for five minutes. Lift one corner of the print (if it is a large one, two adjacent corners are better), and pull steadily without stopping; the print will come off easily, and when dried again will have a highly glazed surface. This surface is not injured by wetting, which will be found to be a great advantage in mounting.

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J. C STRAUSS, St. Louis, Mo.

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"WHAT SHALL I PLAY?"
Herbert Randall, Hartford, Conn.

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S. H. LIFSHEY, Brooklyn, N. Y.

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J. E. RÖSCH, St. Louis, Mo.

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C. A. KRAUSCH, Pasadena, Cal.

Digitized by Google

GEO. HABERNICHT, San Francisco, Cal.

Digitized by Google

A. L. JACKSON, Tacoma, Wash.

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C. R. REEVES, Anderson, Ind.

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GEORGE STECKEL, Los Angeles, Cal.

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W. N. BRENNER, Cincinnati, Ohio

Digitized by Google

H. RANDALL, New Haven, Conn.

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D. ROSSER, Pittsburg, Pa.

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HOMEIER & CLARK, Richmond, Va.

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H. RANDALL, Ann Arbor, Mich.
I. BENT, Operator

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GEORGE E. TINGLEY, Mystic, Conn.

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"AU REVOIR"
Philip S. Ryder, Syracuse, N. Y.

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THE ELECTRIC LIGHT FOR PORTRAITURE.

(From the *British Journal of Photography.*)

SINCE the successful introduction many years ago, by Vanderweyde, of electric-arc illumination for studio portraiture the use of electricity has been gradually but slowly gaining ground in the practice of the best portraitists. We say slowly, for, since the initial cost of an installation—where the current is already laid on, and the main lead is of sufficient capacity—does not necessarily exceed a score of pounds, the non-adoption of this means of lighting cannot well be due to financial causes, and it scarcely need be said that electrically lighted studios are the exception rather than the rule. A question, then, pertinent to the subject naturally arises, "Why this holding back?" We think we have discovered the cause. Recently we were in the company of a large number of what we might term representative professional photographers, when one of the number, apropos of the subject we were discussing, gave an opinion upon it which, to our surprise, was upheld by nearly all present. "Well," he said, "I have scrutinized a lot of portraits taken by electric light. I have never yet seen one equal to a good daylight picture." This opinion, as we say, was echoed by most of those present, yet, to our mind, it emphatically was not justified by the facts of the case. It is true that there are abroad a large number of badly lighted portraits taken with electric illumination; but to condemn the many because of the few is as bad in principle as it is in this case unjustified in practice. We have seen many portraits reflecting the highest credit upon their producers, who having nothing but electricity to depend on for lighting the sitter, yet obtained results which no one could differentiate, by their appearance, from daylight photographs. When, however, we see so much ignorance upon the simple lighting of a studio by daylight we ought not to be surprised at the inability of some men to so arrange their lighting with the electric current that the pictures taken by its aid should neither be inefficient as portraits nor unsuccessful as pictures.

It is obvious, then, that the schoolmaster needs to be abroad in matters of artistic lighting before its true principles are generally understood. There cannot possibly be anything in electric light *per se* that would prevent good portraits being taken; it is merely a question of its application. The chief difference between daylight and the best known forms of electric light illumination is that in the former the direction of the light and the area of what we might term the illuminating pencil is governed by the use of blinds, and is capable of being easily varied so as to obtain a pencil of light of any width, and directed upon the sitter from any angle. In the latter the illuminating area in the majority of forms of the lighting arrangement has a fixed width of illuminating pencil with a small maximum, and is equally capable of being directed from any angle.

The general tendency of inventors has been in the direction of modifications of the "umbrella" form of apparatus—that is, an arrangement shaped like an umbrella with a white reflecting under surface, the light itself being either a series of incandescent lamps directly lighting the sitter, or a central arc light or lights screened from the sitter and indirectly lighting him by reflection from the white inner surface of the umbrella. The incandescent type is almost always placed on a movable stand, while the arc form is used both in fixture and stand form. One great defect of many of the former kinds, and especially noticeable in foggy weather, is the transparent nature of the hemispherical reflector; this can, however, be easily remedied, and should be, as it nullifies one important advantage of the electric form of lighting in that it illuminates the atmosphere between lens and sitter, and so does not utilize the great power possible of avoiding foggy negatives, as would be the case if no illumination proceeded from the lack of the arrangement. All this is avoided in the usual arc forms, as the umbrella has to be substantially built, so as to present a solid reflecting surface for its pure white lining of pigment or paper. It is obvious that by not making use of the direct light of the

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arc itself, the reflected light only being utilized, a great amount of light is actually thrown away, and we have long held the opinion that the true principle of construction should embrace the utilization of both the direct and the reflected light from the arc. There are comparatively isolated instances of the adoption of such a principle, one adaptation of which was quite recently reviewed in these columns.

To carry out such a system in its most perfect form the light itself would be best placed entirely outside the studio windows. Internally half-silvered globes might be used, so as to be as independent of the rain as the usual public outdoor arc lamp. The next point then to consider would be the breaking up of the too dazzling effect upon the eyes that the close proximity of the arc would entail. This might be carried out either by translucent screens or other light diffusing media. A series of prismatic refracting or reflecting glasses could be put up; the "Luxfer prisms" could be utilized, or a series of small silvered reflectors at various angles, according to the distance from the arc, could be adopted. A hundred ways might be devised for obtaining the maximum of light and the minimum of glare, and we feel assured that in the construction of lighting arrangements of this type is to be found the extirpation of the belief of the inferiority of electric to solar lighting. Properly devised and carried out, the acting efficiency of the arc might also be increased to ten-fold that of the arc lighted umbrella form.

HARDENING GELATINE FILMS.

BY HENRY W. BENNETT, F.R.P.S.

RECENTLY in the photographic press the statement was attributed to Professor Namias that he had found, as the result of a series of experiments, that chrome alum, even when in concentrated solution, has very little effect in hardening gelatine. The conclusion was naturally drawn from this statement that it was one of those cases in which photographic workers had been willing to accept it as a fact that chrome alum would harden their gelatine films without ever really testing it practically, and that it was universally accepted simply because it was stated to be a fact in almost every text-book.

It would be interesting to know the details of the experiments that led Professor Namias to form the opinion that chrome alum is almost useless as a hardening agent. Considering how extensively it is used by expert practical workers in various photographic operations with satisfactory results, the inference must be that Professor Namias' conclusions must have been either founded on incomplete data or else on experiments conducted under conditions so different from ordinary work that they can have very little practical value. In cases where a substance is required to effect a certain purpose, it would hardly be used year after year by experienced workers if it did not possess the powers attributed to it. That chrome alum does possess the power of hardening gelatine and making it less soluble is unquestionable, and though it has for many purposes been superseded by formalin, which is more powerful in some respects, yet there are many cases in which the brittleness imparted to the film by formalin is a serious defect, and the greater toughness of one treated by chrome alum renders it much more suitable for the work for which it is intended. For this reason chrome alum is still used to a considerable extent for hardening gelatine, and that it does possess that power, in common with many other chromium salts, a few simple experiments would demonstrate.

My experience of the hardening effect of chrome alum has been gained from successfully carrying out work with its aid that had without it been found to be impossible; and as this work has involved the use of chemical solutions that had a strong solvent action on gelatine in some cases, and of hot water in others, they indicated clearly that this substance can confer on gelatine the power of resisting the solvent action of various solutions that

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would otherwise seriously injure or destroy it.

For years I have used the form of silver intensification for negatives and lantern-slides described in the series of articles that I contributed to *The Amateur Photographer* in May last. With one maker's plate that I used very extensively, the first attempts to intensify thoroughly failed. The silver solution contains a large proportion of ammonium sulphocyanide, and this plate being made with very soft gelatine, the solution invariably softened and reticulated the film to such an extent as to render the negative absolutely worthless. Without a preliminary hardening it was absolutely impossible to intensify this particular plate by the silver method in question. It was found, however, that two or three minutes' immersion in a 2 per cent. solution of chrome alum was a perfect safeguard; after taking the plates from the chrome alum solution, and rinsing in two or three changes of water, they could be intensified without the slightest risk of any injury arising from the sulphocyanide and silver solutions, however long intensification might require to build up the negative to the desired strength. In this work, with very varied plates, including those prepared for lantern-slide making, the chrome alum never failed to harden the film sufficiently, whatever difficulty might exist without it.

A second illustration of the value of chrome alum in hardening gelatine will suggest itself naturally to all carbon workers, and that is the preparation of paper as a support for the print by the single transfer process. For this purpose drawing or other papers are prepared by applying a thin coating of gelatine, composed of about twenty-five parts of gelatine to one part of chrome alum, dissolved in five hundred parts of water, and this resists the action of hot water so effectually that when an exposed carbon print has been simply squeegeed into contact, it can be developed without the slightest risk of leaving its support through the softening action of the water, though development may be very prolonged, and temperature 125° or even 130°. On reading the statement quoted at the commencement of this article, the following simple experiment was made: A piece of medium surfaced drawing paper was prepared as for single transfer for carbon, but with a plain solution of gelatine, Nelson's No. 1, the most soluble gelatine made, one part in twenty of water, and dried. The paper was cut in halves, the two pieces marked for identification, and one immersed for two or three minutes in a 1½ per cent. solution of chrome alum, rinsed, and dried. A carbon print was cut into two pieces, and one squeegeed to each of the prepared papers, and an effort made to develop as usual. The paper coated with plain gelatine failed to hold the print for more than a minute at a temperature of 100°; but that which had been subsequently treated with chrome alum successfully resisted the solvent action of the developing bath, although the print being over-exposed, required long treatment at 120° to 125°.

In all ordinary work it would appear that the practical photographer's conclusion is correct, and the chrome alum is distinctly valuable for hardening gelatine and conferring on it the power of resisting both chemical action and the tendency to dissolve at high temperatures when wet.

There is one aspect of the subject of hardening gelatine that deserves attention, and in this also the practical experience of every-day work is to be preferred to the theoretical conclusions based on incomplete data. It has been frequently stated by recognized photographic authorities that if a gelatine negative or similar film be hardened by chrome alum or formalin it is impossible to satisfactorily intensify, reduce, or otherwise treat it if it is allowed to dry first, and that it can only be successfully treated while still wet from the washing after hardening. This is certainly a fallacy. It is my invariable custom whenever a plate requires hardening before carrying out any operation to dry it after the hardening bath whenever time will allow. The work can then be performed more safely and satisfactorily. This method was adopted after testing the accuracy of the generally adopted view in the following manner: A negative had been hardened in a specially strong solution of formalin for stripping from the glass for reversing—British formalin 2 parts to

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water 3 parts—and after drying it was desired to intensify it with silver. It was found that, instead of any difficulty being experienced as had been anticipated, intensification proceeded more satisfactorily than usual, and there was absolutely no tendency of the silver solution to stain the plate.—*The Amateur Photographer.*

WILL THE PUBLIC STAND IT?

BY PAUL CLARE.

THE "consumer" is credited with being responsible for the prevalence of "the usual thing" in photography. If this is true, he has much to answer for. Before many of us were born—we have the evidence of old-time prints—he had introduced the vase and the column, and had begun to crown the latter with an inverted stovepipe hat. He brought in impossible poses and worse backgrounds, and he demanded "billiard-ball" retouching. Possibly, too, he clamored for the vignette, and for prints that faded. Poor consumer, his sins are heavy upon him.

It is easy to saddle the public with the responsibility for uninspired work; but whether it is quite fair is another matter. Does the public really clamor for poor work? I have known several men who have not been adequately rewarded for the good work they were doing, but I have never known a man who has actually lost ground by improving his work. And while I have seen many businesses in a condition of chronic stagnation, owing largely to lack of quality in the work produced, I have seen several which have forged ahead, financially, when the standard has been improved.

A very large portion of the American public is educated; and almost the entire American-born portion is wideawake and discerning. A gallery on the East Side of New York, or in some mining centres, may depend on illiterate and undiscriminating people for the whole of its custom. In such a location, of course, colored glossy prints in which the jewelry is emphasized may reasonably form a very profitable line. But in centres where American-born workmen predominate there is always a public who will appreciate a better class of work; and this holds increasingly good as we approach the wealthier quarters of a town.

The photographers in wealthy locations have discovered that a good grade of work pays. It is in the poorer quarters where the discovery has not yet been made. The workman—the man whose income comes as the result of solid hours of work reckoned in daily chunks of time—is the man who is going to have value for his money. He will not spend an extra dollar unless he sees the extra value; but if the value is there he will often take it. It is quite possible to rate his purchasing capacity too low.

Much has been said about old and new kinds of portraiture, often by people who scarcely understand the differences and the merits of the two kinds. Some wise persons have adopted the plan of supplying either kind, and where they understand each kind there is little doubt that this plan is a good one. Where, however, they read the two kinds to mean respectively good and bad work they soon drop the one from inevitable lack of support, and return to their preference. Where a man has the requisite versatility he ought to be able, by the variety of his work, to meet any individual taste; and be able, too, when the taste has been gauged, to suggest a class of picture slightly in advance of the original preference. For although we occasionally find a photographer in which the art temperament—which is a thing distinct from art knowledge—is abnormally developed, in the common run of cases common sense and business ability are the factors which govern success.

To say that the public will not stand for good work is a slander. We have its answer in the success of many men who are doing work of a high grade. They have offered work better than the public were getting, and the appreciation of it has conclusively shown that it was not better than the public wanted.

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Some of these men, it is true, have confined themselves to one class of work; and many of the others are known to push some specialty. The tendency, if a man has any of that enthusiasm which is often called "artistic ability," is to push ahead along one line. But specialization is not one of the necessities toward success. The man who raises the standard of his work all around will find that it pays, and there is no need for him to lose a single order. He can photograph the schoolhouse or a prize cow, and can bargain with the farmer for a dozen photographs in trade against a load of stove wood just as well if he is doing good as if he is doing poor work.

PHOTOGRAPHIC INSTRUCTION IN GREAT BRITAIN.*

BY THOMAS R. DALLMEYER.

THE educational facilities which are offered to students in photography in this country have considerably increased of late, but are in the main chiefly elementary, and seldom afford opportunities for research.

So far as I have been able to trace, the first systematic instruction in this country was given by Sir W. de W. Abney in a course at the Chatham School of Military Engineering in 1868. The syllabus used was embodied in Abney's first edition of *Instruction in Photography* (published in 1871), and consisted of notes printed at the school for the use of the class and officers of the corps. The theory was taught in the laboratory and the practical work in the Photographic School; the lectures were accompanied by experiments to illustrate them, and the class worked at the practical part experimentally as they went along.

The publication of Abney's volume was a great stride in raising the young science from the qualitative to the quantitative stage. The keynote of research was, as in all sciences, accurate record of experiment followed by scientific and practical deductions.

The rapid progress of our knowledge of photography has done much to upset the popular fallacy that laboratory work and practical achievement seldom march together. So much are they bound up together that every institution for the teaching of photography should provide means for original research.

In following up the facilities for public instruction in photography we find that in November, 1891, the late M. Leon Warnerke contributed a paper to this Society on "Photographic Technical Instruction on the Continent of Europe," and described very fully the advantages which were offered in photo-technical education at Berlin under Professor Vogel at the Royal Technical High School, founded in 1881, at the Royal Educational and Testing Establishment for Photographic and Printing Processes under Dr. Eder, at Vienna, and also the technical instruction in photography given at Brussels, Ghent, and St. Petersburg. In each case the funds for teaching were contributed by the respective Governments. One felt very keenly how greatly such an institution, offering splendid opportunities for scientific and technological research, would benefit this country if a similar step had been taken by our Government.

In June, 1892, Mr. Howard Farmer contributed a very interesting paper to the Society, in which he pointed out M. Warnerke's omission of the mention of the Regent Street Polytechnic, and of the great and valuable work it had carried out despite the fact that the School was founded by the private enterprise of Mr. Quinton Hogg, and supported by fees paid by the students. This institution was founded in 1883, and has continued to have an uniformly successful career in teaching students in both theoretical and practical work, and in preparing them for the examinations held at the City and Guild Institute. Special courses of training are now given to those taking up (*a*) portraiture as a profession; (*b*) photo-engraving and tri-color work as a profession; (*c*) retouching, finishing in black and white, and coloring as a profession.

* An extract from Mr. Dallmeyer's annual address as President of the Royal Photographic Society, London.

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In addition to this Polytechnic School of Photography at Regent Street, there are in London a number of other schools which include photographic education in their prospectuses.

The London County Council School of Photo-engraving and Lithography at Bolt Court is devoted to the training of those who are engaged in business in any branch of photo-mechanical, photographic, designing, lithographic engraving, printing and book illustrating crafts, but no provision whatever is made for amateurs. The school is under the direction of Mr. A. J. Newton (successor to Mr. Gamble), who is glad to welcome students who wish to carry out research work in photography or in any branch of artistic reproduction, and to give personal supervision. The principal himself has facilities for original work which might be expedited by the aid of assistants.

The Battersea Polytechnic, the Birkbeck Institution, the Borough Polytechnic, the Chelsea Polytechnic, and the Woolwich Polytechnic, all include courses of lectures on the practical and theoretical aspects of photography under the direction of Mr. Edgar Senior, and are arranged to suit the requirements of both amateur and professional students, the course covering the ground included in the examination of the City and Guilds Institute.

The Goldsmiths' Institute is under the direction of Mr. W. T. Wilkinson, and includes a course of practical instruction open to amateurs and professionals.

The Adys Road Continuation School, East Dulwich, is under the direction of Mr. G. G. Lewis, and includes two courses, "a combined course of chemistry and light bearing on photography," and "a practical course in chemistry and light as applied to photography."

At the Cripplegate Institution an elementary class is held by Mr. C. W. Coe, and a more comprehensive general photographic class is conducted by Mr. John H. Gear, who is also a lecturer in pure photography to the Thornton Heath Branch Polytechnic under the Corporation of Croydon.

The Acton and Chiswick Polytechnic conducts a photographic department presided over by Mr. G. C. Laws, and is conducted on similar lines to the Regent Street Polytechnic.

The London Chamber of Commerce has recently undertaken examinations in both the theoretical and practical aspects of photography in connection with the Commercial Education Department, but at present offers no special inducement for research work.

The Northampton Institute, Clerkenwell, under the direction of Dr. Walmsley, offers the greatest facilities for the study of optical appliances used in photography. This institution, which is largely supported by the Technical Education Board, has hitherto worked in close co-operation with the school at Bolt Court, and the instruction and practice of experimental physics required by the students of tri-color work have been provided in the laboratories and by the staff of the Northampton Institute.

It is now proposed by the governing body to establish a new department for advanced opto-technics, and a report on the subject has been submitted to the Technical Education Board of the London County Council (under the direction of Dr. Garnett), with a request that the Board will assist in the provision of the funds necessary for the equipment and maintenance of the department. If this department meets with the Board's approval, facilities for research work in connection with all matters relating to design in optical instruments, including photographic lenses, will be provided in this institution.

I have endeavored to give a complete list of the institutions in London where photographic classes are held. In the provinces, I am only aware of the Leeds Technical School, the Northumberland County Council Technical Education Committee at Hexham, the School Board of Aberdeen, and the Municipal School of Technology at Manchester. I may mention incidentally that I understand the Prime Minister will open a new branch of this latter institution to-morrow, which will include opportunities for the study of photographic technology such as have not yet been approached for completeness in this country. It will be directed by Mr. Gamble, formerly of the London County Council School at Bolt Court.

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So far as I am aware, the examinations held at the City and Guilds Institute take the highest standard as a test for photographic efficiency, and I believe that nearly all the students who receive general instruction in photography at the institutions I have enumerated can be specially prepared to take these examinations.

I need not remind you that success in these examinations is the chief recommendation to the Fellowship of this Society. The necessity of establishing a single and satisfactory portal for admission to the Fellowship has long been in the minds of your present and past Councils; it is hoped that at no very distant date a scheme may be submitted which will be satisfactory to the Fellows and Members of the Society.

In setting forth the opportunities which are available for instruction in photography I have throughout had in mind the position which this Society ought to take. It should be pre-eminently the leading institution in photographic technology. A very earnest attempt to form such an institution was made by this Society in October, 1890, when Mr. Kenrick B. Murray, Secretary to the London Chamber of Commerce, accompanied by Mr. Glaisher, Captain Sir W. Abney, Dr. Lindsay Johnson, Colonel Gale, Sir Henry Trueman Wood, and Messrs. England, Robinson, and Bird accepted an invitation from the Lord Mayor to discuss the question of a proposed Photographic Institute. It was then stated that this Society was desirous of initiating and supporting such a scheme if the necessary funds could be secured.

The project commended itself to the then Lord Mayor, Sir Henry Isaacs, and it was thought that a well-considered scheme would not only have his support but that a sum of ten thousand pounds might be forthcoming. The following were the main divisions of the work proposed: 1. Science. 2. Education. 3. Art. 4. Industry. As you are aware, gentlemen, this effort unfortunately proved unsuccessful, and the Society has up to the present time only itself to thank for its more flourishing condition, which is due to the guarantee and financial aid of its own membership.

The idea of forming such an institution was first promulgated, I believe, by Dr. Emerson in the first edition of his *Naturalistic Photography* (1889), where he writes: "We fondly hope that a college of photography may one day be instituted, where good art and science training may be obtained, where regular classes will be held by professors and regular terms kept, and where some sort of distinguishing diploma, such as Member of the Royal Photographic College, will be given to all who pass certain examinations. . . ."

In February, 1892, Professor Meldola contributed a paper to the Society "On Photography as a Branch of Technology." There is no doubt that the prophecy which he quoted from the *Edinburgh Journal* of 1843, "that photography would take the highest rank among the inventions of the present age," has been realized. There is not a science, art, perhaps scarcely an industry, in which photography has not played a most important part, often indeed being the pioneer process of investigation. Perhaps the least important of its applications are the most popular ones, namely, the taking of portraits and landscapes, although the pleasure derived from the practice of the art and its commercial value must not be overlooked. Being a branch of technology of the first order of importance, and appealing as it does to both the arts and sciences for recognition, it should also appeal to the nation at large. I have not attempted to present to you a picture more vivid than that portrayed by Professor Meldola in 1892, indicating the necessity for such an institution, but merely ask you members of the Society, the thousands of members who are affiliated to our Society, the London Camera Club, the Photographic Convention of the United Kingdom, the National Photographic Record Association, the Professional Photographers' Association, and the nation at large, which owes so much to photographic technology, whether the iron is not now sufficiently hot for us to strike again, so as to obtain adequate recognition of our science and sufficient means to pursue it.

The occasion of the Jubilee of the Society will be a most fitting one, and I venture to hope that my successor, whom we have reason to believe will be one who has rendered pre-eminent services to photography and to this Society, will lend his influence to promote a fresh effort in this direction.

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EDITOR'S TABLE.

THE Photographers' Association of Texas held a very profitable convention at San Antonio, September 30th to October 2d. Unfortunately the report of the convention reached us only a few days ago, so that we are unable to do more than mention the affair. From fifty to one hundred members attended the meetings, which were devoted to the discussion of practical questions, such as the tax upon photographers in Texas, the *f* value of a lens, business methods, etc. At the election of officers the following were elected to serve for 1902–03: A. A. Brach, President, San Antonio; A. L. Blanchard, Secretary, Hillsboro; Bert Williams, Treasurer, Denton; C. E. Hillyer, First Vice-President, Belton; John Swartz, Second Vice-President, Fort Worth; H. J. Braunig, Third Vice-President, Hallettsville; J. Frank Montgomery, Fourth Vice-President, Victoria.

The convention of 1903 will be held at Fort Worth. We note with pleasure that the annual dues for membership were raised from $1 to $1.50, $1 of which goes to the treasury of the Association and 50 cents to the *Southwest Photo* journal as the official organ of the Association. Mr. CUMMING, as editor of the *Southwest Photo*, has worked hard for the photographers of Texas, and his work deserves this recognition.

FOR the first time in many years the year closes without any annual or year-book of photography being published. The *American Annual*, now the only year book issued in America, is promised within a week or two. The *British Journal Almanac* and *Photograms of the Year* 1902 should be here early in January.

SUBSCRIBERS desiring to renew their subscription to this MAGAZINE in combination with other photographic journals can do so to advantage through our office. Send list of the journals desired, and we will quote advantageous combination prices for cash with order. But first consult the special offers given in our advertising pages.

THE Philadelphia Society recently gave an exhibition of photographs by J. C. STRAUSS, of St. Louis, and S. L. STEIN, of Milwaukee, at the Society's rooms in Philadelphia. The exhibition comprised a collection of choice portraiture, and the quality of the work was keenly appreciated by those who attended the exhibition. We hope that this new movement of showing good professional work before amateur societies will grow.

THE CHRISTCHURCH (NEW ZEALAND) "WEEKLY PRESS."—We have noticed in past issues of the magazines the remarkable typographical and process reproduction work done by the Christchurch (New Zealand) *Weekly Press*. The Christmas numbers of this journal have excited the admiration and interest of pressmen all over the world. We may safely say, however, that the annual for 1902, just received, far eclipses all previous annual numbers in the variety of its interest and pictorial excellence.

The number comprises some fifty-six pages, 13 x 18, crowded with good stories by noted writers, and a wealth of illustration covering the beauty spots and life of New Zealand. The quality of the half-tone work is unusually good throughout. There are three special supplements in colors, and a wonderful "Portrait of a Boy," by BOISSONNAS, of Geneva, cleverly reproduced in half-tone, the plate measuring 14 x 17. This is one of the best examples of half-tone work in this large size that we have seen. We congratulate Mr. A. H. BRISTED, the editor, and his staff upon the production of a splendid bit of work.

WE are glad to report that *Voigtländer and I*, Mr. JAMES F. RYDER'S book, is selling in an encouraging way. Hundreds of photographers have already got the book and have enjoyed its contents. Among many distinguished people who have expressed their interest in the volume we note letters from President ROOSEVELT and the Secretary of State, Mr. JOHN HAY. As the record of a remarkable life's work, *Voigtländer and I* should be read by every American photographer. Will readers kindly note that our office is the Eastern headquarters for the sale of the book, and that copies will be mailed promptly on receipt of the price, $2.50. It is a splendid holiday gift book, being beautifully illustrated and printed.

The Photogram (London) announces an attractive programme for its 1903 volume, including several short series of practical articles on gum-printing, mounting of exhibition prints, and color photography. For copies of this prospectus address 1 Arundel St., London, W. C., England.

THE Kodak Developing Machine is now obtainable in several sizes, from "Brownie" pictures up to 5 x 7 films. This wonderful machine is undoubtedly practical in its operation and deserves all the praise it has secured. Photographers who do developing for amateurs should investigate its advantages.

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